Chapter 20
Public Services and Utilities

20.1 Environmental Setting/Affected Environment

This section describes public services and utilities in the study area (the area in which impacts may occur) that could be affected by construction, operations and maintenance of the action alternatives in the Plan Area (the area covered by the BDCP, which includes the Sacramento–San Joaquin Delta (Delta), the Suisun Marsh, and portions of the Yolo Bypass), and the Areas of Additional Analysis. Public services include law enforcement, fire protection and emergency response, hospitals and medical services facilities, public schools, and libraries. Utilities include solid waste management, water supply and treatment, wastewater treatment, energy (electricity and natural gas), and communications. Public services and utilities are provided throughout the study area by various entities including counties, cities, community services/special districts, or private companies.

Other chapters of the Environmental Impact Report/Environmental Impact Statement (EIR/EIS) that contain information related to public services and utilities include the following.

- Water supply throughout the Plan Area and allocations to SWP and CVP south-of-Delta contractors (water service providers) are discussed in Chapter 5, *Water Supply*. Specifically, water supply for agricultural irrigation, and the capability of existing water supply infrastructure (namely, the SWP and CVP facilities) to handle any increase in flow quantities caused by action alternatives, is addressed in Chapter 5, *Water Supply*.
- Stormwater facilities and management, and municipal wastewater contributions to water quality are discussed in Chapter 8, *Water Quality*.
- Levee-related effects, including those on maintenance and effects resulting from possible changes in levee maintenance, are discussed in Chapter 6, *Surface Water*.
- Effects on public parks and recreational facilities are discussed in Chapter 15, *Recreation*.
- Possible changes to funding sources for provision of public services are discussed in Chapter 16, *Socioeconomics*.
- Public transportation (e.g., transit and ferries) are discussed in Chapter 19, *Transportation*.
- Effects on law enforcement, fire protection, and emergency response providers because of construction detours or construction-traffic related delays, and possible vehicular access restrictions to areas within the study area are discussed in Chapter 19, *Transportation*.
- Energy providers and the transmission of energy resources (e.g., gas and electric) required for BDCP operations are discussed in Chapter 21, *Energy*.
- Effects related to hazardous materials and waste disposal needs generated by the alternatives are discussed in Chapter 24, *Hazards and Hazardous Materials*.

This section does not discuss the public services and utilities setting or potential effects in the SWP and CVP Export Service Areas Region (Export Service Areas Region) because direct and indirect effects on public services and utilities from implementing the alternatives are primarily related to effects in the study area. However, to the extent that there is a potential for growth inducement

effects on public services and utilities in the Export Service Areas Region, this topic is addressed in Chapter 30, *Growth Inducement and Other Indirect Effects*.

20.1.1 Potential Environmental Effects Area

The study area evaluated for potential effects on public services and utilities includes the Plan Area and the Areas of Additional Analysis. See Chapter 1*, Introduction*, for a detailed description of the Plan Area (Figure 1-4). The Areas of Additional Analysis are two areas outside the defined Plan Area that encompass potential power transmission corridors. One area lies west of the Plan Area and is considered in analysis of proposed BDCP alternatives that include the West Alignment (Alternatives 1C, 2C, and 6C). The other area lies east of the Plan Area and represents one of two potential transmission line alignments for Alternative 4.

For purposes of this chapter, the study area also includes a 1-mile buffer zone around the Plan Area boundary for most public service and utilities categories because services and utilities within 1 mile of the Plan Area could be affected by construction-related access within service areas or a potential increase in service demand from construction or implementation of BDCP alternatives. Two exceptions to the 1-mile buffer are hospitals and solid waste facilities. A 5-mile buffer zone around the Plan Area boundary was used for hospitals. Solid waste facilities were identified by considering which locations in the surrounding Delta communities were most feasible for use by the alternatives.

20.1.1.1 Public Services

Law Enforcement

Law enforcement in the Plan Area is provided by city police departments in incorporated areas and by county sheriff departments in unincorporated areas. State assistance is provided by the Valley Division of the California Highway Patrol and the California Department of Fish and Wildlife (DFW), which each operate an office in the Plan Area. Each of the counties in the Delta (except Alameda County) also has a marine patrol unit that is responsible for law enforcement on Delta waterways. The United States Coast Guard has a station in Rio Vista in Solano County, and provides nautical enforcement in all the counties within the Delta. While the overarching responsibility of these agencies is to prevent and respond to criminal activity and apprehend suspects, they offer a variety of services to the community. These services include safety patrol, dispatch of safety personnel, detainment of adult and juvenile offenders, operation of correctional facilities, and security for judicial facilities.

Response times for the law enforcement agencies vary according to the size of patrol area, density of the population served, distance to the call area, traffic congestion, and call volume. Most law enforcement agencies have a staffing goal of 1.5 officers per 1,000 persons. Table 20A-1 in Appendix 20A identifies law enforcement facilities and stations within 1 mile of the Plan Area, the staffing goals, and average response times for each agency. Of the twenty-six law enforcement agencies identified in the Plan Area, seven have staffing goals of less than 1.5 officers per 1,000 persons, while four identify staffing goals that exceed the standard. The law enforcement facilities in the Plan Area are shown on Figure 20-1.

Fire Protection and Emergency Response

Fire protection and emergency response in the Plan Area, as throughout the state of California, is provided by a variety of public and private entities. Communities within the Plan Area are provided fire protection, rescue, and emergency services by a combination of fire protection entities including cities, counties, fire protection districts[1] (FPD), volunteer fire departments, and supplemental services provided by the state. Portions of outlying areas of the Plan Area receive fire protection from the California Department of Forestry and Fire Protection (CAL FIRE). This state agency provides emergency services, fire, medical, rescue, and disaster relief throughout California. While CAL FIRE does not have any fire stations within the Delta (other than the Office of the State Fire Marshal), the agency does assist with emergencies in the unincorporated communities and State Responsibility Areas from the Sonoma/Lake/Napa Unit and the Santa Clara Unit (North Coast Region I) as well as the Amador/El Dorado Unit and Tuolumne/Calaveras Unit (Central Sierra Region IV).

Within the Plan Area, densely populated areas are served by municipal fire departments, and rural and unincorporated areas are served largely by many FPDs. The Plan Area consists of a wide range of population densities, so some FPDs contain multiple fire stations, while other FPDs contract with nearby fire protection entities outside their district. Mutual aid agreements exist between many of the FPDs to ensure that sufficient workforce and equipment are available to respond to emergencies regardless of where the emergency occurs. Some areas within the Plan Area are not currently within a FPD service area. This area is labeled "None" on Figure 20-2, which shows the fire protection districts within and adjacent to the Plan Area. The area labeled "None" is an unprotected area within the Plan Area that is neither served by adjoining fire districts nor the City of Stockton, nor is it served by CAL FIRE under a State Responsibility Area (San Joaquin Local Agency Formation Commission 2011). French Camp-McKinley FPD has recently entered into contracts with several homeowners to provide protection (San Joaquin Local Agency Formation Commission 2011).

FPDs are determined by county; within each county a number of FPDs are created so that a timely response can be maintained by those facilities.

In many instances, the service area for an FPD may be within the Plan Area, but an actual station may be outside of the Delta. Figure 20-2 illustrates the service area boundaries for each of the fire protection entities, as well as the location of fire stations/facilities within the Plan Area.

Response times assist in measuring distribution of new fire stations and the adequacy of fire protection throughout a given service area. In determining the best location for fire facilities within each county, response times are one of the most important determinants. Response times depend on a number of factors, including traffic circulation, development, population growth, and geographic distance. Response time is broken into three components: alarm processing time (dispatch), turnout time, and travel time. The element of time for alarm processing is in the hands of the dispatch and communication system. The amount of time it takes to turnout fire apparatus is different depending on whether the station is staffed by full-time permanent or otherwise assigned personnel, or whether the staffing is recalled (volunteer). Travel time is a function of speed and the availability of a road network to get to the scene of an emergency.

[1] Special-purpose districts or special district governments in the United States are independent governmental units that exist separately from, and with substantial administrative and fiscal independence from, general purpose local governments such as county, municipal, and township governments. Most special districts provide only a single function, such as fire protection.

While the goal within all districts is to provide service as quickly and efficiently as possible, actual response time goals vary due to the range in densities, travel distance, and staffing capabilities. National and state guidelines call for urban fire departments to respond within 5–6 minutes of receiving an emergency call to best promote life-saving and contain fires at least 90% of the time (Burr Consulting 2009). Most fire protection entities have a desired response time in accord with their particular county's emergency response plan or general plan goals and policies. In some instances, a fire protection entity may have a different service goal that coincides with the geographic service area and available resources of that particular entity.

Table 20A-2 in Appendix 20A identifies the response time goals and the average response times for each of the 23 fire protection entities identified within the Plan Area. Of those entities with identified targets and reported data consistent with targets, four have an average response time that exceeds the identified goal while six entities' average response times are shorter than the goal. In some instances, the average response time is unknown because of the rural nature of a given area and limited resources for particular fire districts.

Specific information on geographic service areas, service goals, and dispatch locations for each of the fire protection entities with stations or facilities in the Plan Area is summarized in Table 20A-2 in Appendix 20A.

Emergency response is often coordinated directly through each county office of emergency services or other similar emergency management dispatch entity. Frequently, emergency ambulance services are contracted to private ambulatory companies and other privately owned entities under mutual aid agreements to provide emergency services throughout a given area. Such private providers work closely with local jurisdictions and fire protection entities. Chance of survival is often related to how quickly a patient receives medical attention. The Center for Public Safety Excellence recommends a 50-second dispatch time at least 90% of the time. Additional time is factored in for response once dispatch communicates the emergency to the responder. Ambulance response time standards in individual communities are based on the urban or rural character of the area. Ambulance response times typically allow several additional minutes in rural areas compared to urban. This section identifies each fire protection entity throughout the Plan Area; however, private emergency ambulance providers are not identified.

Hospitals

Hospitals typically are strategically located to serve an entire community or a specific region of a county. Many larger hospitals and community/regional healthcare facilities offer a full range of inpatient services, including surgical and emergency care, as well as specialized services that focus on a particular practice (e.g., acute medical care, mental health services, convalescent care, cardiology, women's services, chemical dependency). Many hospital and healthcare campuses also include outpatient services, clinics, health centers, general medical care offices (e.g., pediatrics and family practice), and other associated medical and/or healthcare-related facilities. Healthcare is usually provided through local governments, either directly or through the counties and cities, or franchised to and operated by private providers.

For the purposes of this analysis, only the hospitals located within the Plan Area and up to 5 miles outside the Plan Area boundary were identified. As listed in Appendix 20A, Table 20A-3 and shown in Figure 20-1, there are 20 hospitals/medical facilities, generally in urbanized areas, including Antioch, Pittsburg, Tracy, Stockton, Sacramento, Lodi, and Fairfield. More hospitals are in

Sacramento and Stockton than in other cities. None of the hospitals in Alameda County or Yolo County are within 5 miles of the Plan Area.

Public Schools

Local public schools in the Plan Area encompass elementary, middle, and high schools. Figure 20-3 illustrates the twenty-four school districts that serve the six counties of the Plan Area. Table 20A-4 in Appendix 20A lists the 209 schools that serve the communities within the Plan Area and the current enrollment numbers for each school, which identify total enrollment of 148,880 students across the Plan Area. Enrollment data were collected from DataQuest, an online system that provides reports for accountability about California's schools and school districts, including test data, enrollment, graduates, dropouts, course enrollments, staffing, and data regarding English learners. The data are collected annually, in early October on a day designated by the California Department of Education (CDE) as "Information Day," and are usually certified and released in late spring or early summer. The enrollment numbers reflected in this section are directly from the DataQuest site (California Department of Education 2009). Capacity information was obtained by contacting schools and districts directly. As shown in Table 20A-4 in Appendix 20A, most schools are operating within capacity, although some schools in the Plan Area are operating above capacity.

Libraries

The Plan Area is served by five county library systems and one city library system that comprise twenty-nine individual branches. Public libraries typically are funded by local property taxes, state funds, library fines and fees, grants, and donations. In addition to traditional services, county libraries increasingly provide additional community services such as adult literacy programs, mobile book services, children's programs, and internet access. Demand for library services is affected by population growth and demographic changes. Table 20A-5 in Appendix 20A lists each library branch, its system, and address.

20.1.1.2 Utilities

Solid Waste Management

California Public Resources Code, Section 40191[a] defines "solid waste" as any discarded solid, semisolid, or liquid material that is not hazardous waste, manure, vegetable or animal solid or semisolid. Garbage, paper, aluminum cans, and glass jars are common examples of non-hazardous solid wastes that are typically disposed of in a landfill or recycled into new materials. Municipal governments in the Plan Area collect solid waste or contract with private franchisers for collection and transport to landfills. They also license collection companies to service commercial or industrial waste generators. Cities and counties are responsible for maintaining their own solid waste facilities, including transfer stations, disposal sites, and resource recovery facilities. They may own and/or operate them, contract with each other, or contract with a private company to provide or operate facilities. A solid waste facility, site, or operation may include one or more waste handling activities (units). Cities and counties must routinely inspect active and closed solid waste facilities to ensure compliance with applicable state minimum standards and permit conditions.

Cities and counties are also responsible for the disposal or recycling of hazardous wastes. Hazardous wastes include corrosive, toxic, reactive, or flammable materials, such as oil-based paints, solvents, batteries, and automotive fuels that should be disposed of, or recycled, at a licensed facility

specializing in hazardous waste management. Each county and city is required to maintain individual hazardous waste management plans that specify goals, policies, and associated objectives for managing hazardous wastes and facilities within its respective jurisdiction. The abatement, transport, and disposal of hazardous materials are typically managed by private contractors. Additional information on hazards, hazardous waste, and the transportation and disposal of hazardous materials is included in Chapter 24, *Hazards and Hazardous Materials*. Potential effects on solid or hazardous waste management facilities from the need to dispose of hazardous materials are therefore not discussed in this chapter.

Table 20A-6 in Appendix 20A identifies the active landfills, large volume transfer/processing facilities, and other facilities that process/manage various waste types (i.e., recovery/recycling facilities, composting facilities, and landspreading facilities) within the Plan Area and in nearby communities, except for Solano and Yolo Counties. There are no solid waste facilities in the study area within Solano and Yolo Counties. Throughout the study area, 49 solid waste facilities have been identified (Figure 20-4), of which 11 facilities are solid waste landfills that are permitted to receive, process, handle, and/or dispose of the following types of materials: agricultural, asbestos, friable, ash, construction/demolition, contaminated soil, green materials, industrial, mixed municipal, and sludge (biosolids). These solid waste landfills have a combined, permitted remaining capacity of approximately 440 million cubic yards (over 300 million tons).

Wastewater Management

Wastewater generated in the Plan Area is handled by sanitary sewer systems, treatment plants, and individual septic systems. Municipal and industrial wastewater is typically transported to a treatment facility, treated, and then the treated effluent is discharged into a receiving water body (i.e., rivers, streams, creeks, and sloughs). In some rural areas where sewer service is unavailable, residents and businesses use onsite septic systems. Treatment plants for individual nonindustrial developments also exist in some areas to treat localized wastewater from mobile home parks, apartment complexes, and resorts.

Methods of land disposal include evaporation/percolation ponds or application to irrigated agricultural lands. Recycled effluent is also used for industrial purposes or agricultural irrigation during the summer months. In some cases, municipalities may provide wastewater collection infrastructure and services that discharge to regional facilities owned and operated by another municipality.

A total of 21 wastewater treatment facilities serving the Plan Area have been identified. Appendix 20A, Table 20A-7 lists addresses and services for each facility.

Water Supply and Water Treatment

Water service providers in the Plan Area include cities and counties, special districts, and private utilities. Water service providers range in size from those with a few service connections to those with thousands of connections. Water service providers obtain their water from surface water, groundwater, or a combination of these sources. The amount of water available to these service providers is defined by water rights, water contract agreements, groundwater pumping limitations, and the infrastructure required to treat, pump, and deliver water. The 27 water agencies that serve the Plan Area are listed in Appendix 20A, Table 20A-8. Chapter 5, *Water Supply*, provides additional information about water resources in the Plan Area.

Electricity and Natural Gas

Potential effects of the construction and operation of BDCP facilities and habitat restoration activities on the existing electric and natural gas distribution facilities are generally evaluated in this chapter. The existing energy utilities in the study area such as aboveground and underground electric transmission and distribution lines, power poles, and gas lines are identified.

Energy providers within the Plan Area include electric utility districts and natural gas companies. In some cases, energy is generated by the utility districts that distribute this energy; in other instances, energy is generated by an unrelated generator and sold to the utility company. This section discusses the existing energy providers and energy distribution within the Plan Area. Additionally, natural gas and oil resources are developed within the study area.

There are five electrical utility districts within the study area, including Lodi Electric Utility, Modesto Irrigation District (MID), Pacific Gas and Electric Company (PG&E), Port of Stockton, and Sacramento Municipal Utility District (SMUD). Lodi Electric Utility and MID are publicly owned utilities, PG&E is an investor-owned utility, and the Port of Stockton and SMUD are municipal utilities.

Electricity within the Plan Area is transmitted by power lines owned by Western Area Power Administration (Western) and the Transmission Agency of Northern California (jointly own California-Oregon Transmission Project), PG&E, SMUD, and MID. The existing transmission lines are sized at 500 kilovolts (kV), 230 kV, 115 kV, 69 kV, or 60 kV. Distribution lines are lower voltage, and therefore, carry a smaller amount of power (e.g., 24 kV), and are generally owned by the utility companies that use them.

As described in Chapter 21, *Energy*, two electrical transmission grids could supply power to the BDCP: PG&E (under the control of the California Independent System Operator [CAISO]) and Western. The electrical power needed for the conveyance facilities would be procured in time to support construction and operation of the facilities. The SWP Power and Risk Office will coordinate with Western, PG&E, and CAISO to identify, evaluate, and establish the electrical interconnection of the BDCP pumps to the California electric grid. Purchased energy may be supplied by existing generation or by new generation constructed to support the overall energy requirements of the western electric grid. Chapter 21, *Energy,* addresses energy effects which are evaluated as the additional pumping energy requirements for the BDCP alternatives and the additional energy for pumping increased Delta exports for some of the BDCP alternatives.

Oil and natural gas extraction and storage facilities are located throughout the Delta. Figure 24-5 in Chapter 24, *Hazards and Hazardous Materials*, shows the oil and natural gas wells within the Plan Area in relation to the action alternatives. Natural gas distribution is provided by PG&E in the study area.

Communications

AT&T, Inc. is the primary supplier of telephone service to the study area. Underground fiber trunk lines feed switching equipment, and overhead lines and poles supply individual service units. The communication lines are typically aligned parallel to roadways and then cross roadways to supply individual service units. Cable markers indicating underground cabling are located in some areas parallel to the roadways. A network of alternative telephone companies, cellular communication companies, and cable companies also serve the region. New service to specific sites is accomplished

on a case-by-case basis, and established in accordance with goals and policies set forth in local general plans regarding the provision of utilities, such as telephone and cable service.

20.2 Regulatory Setting

This section identifies and discusses relevant federal, state, and local regulations related to public services and utilities in the study area.

20.2.1 Federal Plans, Policies, and Regulations

Public services and utilities within the Plan Area are primarily managed and regulated by the State of California, local governments, and local and regional special districts. Federal regulatory agency involvement is limited to review of a public service or utility provider's operation related to a specific resource area. Federal regulation can oversee issues regarding the environment, energy, waterways, fisheries, and others. These subject areas and the associated agencies, including the U.S. Fish and Wildlife Service, Bureau of Reclamation, National Marine Fisheries Service, U.S. Environmental Protection Agency, Natural Resources Conservation Service, U.S. Army Corps of Engineers, U.S. Forest Service, U.S. Geological Survey, Western Area Power Administration, and the Bureau of Land Management, are covered in other applicable chapters of this EIR/EIS. The federal regulations and standards summarized below are those applicable to the BDCP alternatives, and related to public services and utilities identified within this section.

20.2.1.1 Public Services

Fire Protection and Emergency Response

National Fire Protection Association 1710 Standard

The National Fire Protection Association 1710 Standard is not a law or a federally mandated regulation. However, it is used as a "best practice" standard. This standard contains minimum requirements relating to organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by substantially all career fire departments. The requirements address functions and objectives of fire department emergency service delivery, response capabilities, and resources. This standard also contains general requirements for managing resources and systems, such as health and safety, incident management, training, communications, and pre-incident planning. This standard addresses the strategic and system issues involving the organization, operation, and deployment of a fire department and does not address tactical operations at a specific emergency incident.

The National Fire Protection Association 1710 Standard recommends a response time of 6 minutes or less for 90% of the time for initial fire suppression and/or emergency medical response. This takes into account dispatch time (1 minute), turnout time (1 minute), and travel time (4 minutes).

The National Fire Protection Association 1710 Standard for the Organization and Deployment of Fire Suppression Operations is used as the "best practice" for determining appropriate initial response of fire suppression resources. This standard requires the initial response (4 firefighters) within 5 minutes, 90% of the time, and a full effective fire force (15 firefighters) within 9 minutes, 90% of the time. Response times in the Plan Area meet the National Standard.

National Fire Protection Association 1720 Standard

This standard contains minimum requirements relating to the organization and deployment of fire suppression operations, emergency medical operations, and special operations to the public by volunteer and combination fire departments. The requirements address functions and outcomes of fire department emergency service delivery, response capabilities, and resources. This standard also contains minimum requirements for managing resources and systems, such as health and safety, incident management, training, communications, and pre-incident planning. This standard addresses the strategic and system issues involving the organization, operation, and deployment of a fire department and does not address tactical operations at a specific emergency incident. This standard does not address fire prevention, community education, fire investigations, support services, personnel management, and budgeting.

20.2.1.2 Utilities

Electricity and Natural Gas

The Federal Energy Regulatory Commission (FERC) is an independent agency with authority to regulate interstate electric energy transmission. FERC is also responsible for reviewing proposals to build liquefied natural gas terminals, interstate natural gas pipelines, and for licensing hydropower projects.

20.2.2 State Plans, Policies, and Regulations

State of California regulations exist for several public services and utilities; many address the provision of specific aspects of providing public services or operating a utility and are discussed in other sections (Chapter 21, *Energy* and Chapter 25, *Public Health*). State regulations uniquely related to public services and utilities, as they are addressed in this section, are summarized below.

20.2.2.1 Public Services

Fire Protection and Emergency Response

Health and Safety Code Sections 13145 and 13146

CAL FIRE provides wildland fire protection and implements the State Fire Marshal's regulations. The State Fire Marshal is apart from CAL FIRE executive staff. California Health and Safety Code Sections 13145 and 13146 authorize, with some exceptions, local fire chiefs, or their designees, to enforce State Fire Marshal regulations. The fire chief can appoint a full-time building official as an authorized representative; however, the ultimate responsibility lies with the fire chief. CAL FIRE employs law enforcement officers that investigate fires, issue citations, and assist local fire and law enforcement agencies in arson, bomb, fireworks, and fire extinguisher investigations, as requested (California Health and Safety Code [Sections 13145 and 13146] 2009).

Health and Safety Code, Section 13801

Fire districts are formed and regulated pursuant to the California Health and Safety Code, Section 13801 et seq., also known as the Fire Protection District Law of 1987. The enabling legislation authorizes fire districts to provide fire protection, ambulance, and rescue services. Recognizing that

the state's communities have diverse needs and resources, it was the intent of the Legislature in enacting this law to provide a broad statutory authority for local officials.

Public Resources Code Section 4125

In accordance with the California Public Resources Code Section 4125 et seq., commonly known as the State Fire Responsibility Act, the State Board of Forestry classifies all lands within the state based on certain factors (e.g., cover, beneficial use of water from watersheds, probable damage from erosion, and fire risks and hazards). Next, the State Board of Forestry determines those areas where the financial responsibility of preventing and suppressing fires is primarily the responsibility of the State. The prevention and suppression of fires in all areas that are not within a State Responsibility Area becomes primarily the responsibility of the local or federal agencies, as applicable.

Hospitals

Office of Statewide Health Planning and Development

The Office of Statewide Health Planning and Development (OSHPD) is responsible for the development of administrative regulations and building standards for the construction of hospitals, skilled nursing facilities, licensed clinics, and correctional treatment centers in California. OSHPD also reviews and inspects health facility construction projects. The California Emergency Management Agency also has a coordination role in identifying and facilitating mitigation for multiple hazards that may affect emergency services (Office of Statewide Health Planning and Development 2009).

Public Schools

California Department of Education Standards

The California Department of Education published the Guide to School Site Analysis and Development to establish a valid technique for determining acreage for new school development. Rather than assigning a strict student/acreage ratio, this guide provides flexible formulas that permit each district to tailor the ratios as necessary to accommodate each district's individual conditions. The Department of Education also recommends that a site utilization study be prepared for the site, based on these formulas.

20.2.2.2 Utilities

Land Use and Resource Management Plan for the Primary Zone of the Delta—Utilities and Infrastructure Section

The California Legislature passed and the Governor signed into law on September 23, 1992, the Delta Protection Act of 1992 (Senate Bill [SB] 1866). In accordance with the act, the Delta Protection Commission (DPC) prepared a comprehensive resource management plan for land uses within the Primary Zone of the statutory Delta. The Land Use and Resource Management Plan (LURMP) for the Primary Zone of the Delta consists of three sections (Delta Protection Commission 1995).

- Part I, an introduction that describes the program and objectives.
- Part II, findings and policies, and recommendations for local governments, state agencies, or special district action.

- Part III, a description of the program for implementing the plan.

Policies are the directions for actions the local governments must embrace and support through amendments to the general plans, if necessary. The policies are intended to provide a coordinated Delta-wide approach to local government actions.

The primary goal of the Utilities and Infrastructure Section of the LURMP is to protect the Delta from excessive construction of utilities and infrastructure facilities, including those that support uses and development outside the Delta. Where construction of new utility and infrastructure facilities is appropriate, the project must ensure the impacts of such new construction on the integrity of levees, wildlife, and agriculture are minimized. Local plans and decisions in the Primary Zone must be in conformance with the DPC's plan and local decisions will be subject to appellate review by the DPC. No similar authority exists with respect to State projects. The use of consistently applied local policies, subject to administrative review for conformance with the act and plan, are helpful in achieving the goals of orderly and balanced conservation and development of Delta resources.

Utilities and Infrastructure policies are listed below.

- **Utilities and Infrastructure Policy P-1:** Impacts associated with construction of transmission lines and utilities can be mitigated by locating new construction in existing utility or transportation corridors, or along property lines, and by minimizing construction impacts. Before new transmission lines are constructed, the utility should determine if an existing line has available capacity. To minimize impacts on agricultural practices, utility lines shall follow edges of fields. Pipelines in utility corridors or existing rights-of-way shall be buried to avoid adverse impacts to terrestrial wildlife. Pipelines crossing agricultural areas shall be buried deep enough to avoid conflicts with normal agricultural or construction activities. Utilities shall be designed and constructed to minimize any detrimental effect on levee integrity or maintenance.
- **Utilities and Infrastructure Policy P-2:** New houses built in the Delta agricultural areas shall continue to be served by independent potable water and wastewater treatment facilities. Uses which attract a substantial number of people to one area, including any expansions to the Delta communities, recreational facilities or businesses, shall provide adequate infrastructure improvements or pay to expand existing facilities, and not overburden the existing limited community resources. New or expanded construction of wastewater disposal systems shall ensure highest feasible standards are met, as determined by the local governing body. Independent treatment facilities shall be monitored to ensure no cumulative adverse impact on groundwater supplies.
- **Utilities and Infrastructure Policy P-4:** High groundwater tables and subsiding soil make the Delta an inappropriate location for solid waste disposal. Generation of waste shall be minimized through recycling programs for metals, glass, paper, cardboard, and organic materials. Recycling depots for these materials shall be located in central locations to serve Delta residents, visitors, and businesses.
- **Utilities and Infrastructure Policy P-7:** Operation of draw and swing bridges shall balance needs of land and water traffic. Commercial vessels and emergency road traffic shall have right-of-way over other traffic.

Utilities and infrastructure recommendations are listed below:

- **Utilities and Infrastructure Recommendation R-2:** Bridges provide critical links within the Delta. While bridges must be maintained to provide safe access across waterways, bridges

should not be constructed so as to invite roadway expansion. Ferries should be maintained by public entities as long as they are economically viable. Public-private partnerships should be explored to offset costs of maintenance and operation. Hours of service may be curtailed and/or fees charged to non-residents.

- **Utilities and Infrastructure Recommendation R-4:** Materials dredged from Delta channels should, if feasible, be stored at upland sites for reuse for levee maintenance and repair, and other feasible uses in the Delta. Impacts to wildlife caused by storage of dredged materials should be mitigated.
- **Utilities and Infrastructure Recommendation R-8:** Utilities should be required to contribute a fair share to the cost of levee maintenance and other local services and should not result in a reduction of assessable acreage for reclamation districts.

Energy

California Energy Commission

The California Energy Commission (CEC) has regulatory authority over energy planning and policy; duties and responsibilities include the following.

- Forecast future energy needs.
- License thermal power plants 50 megawatts or larger.
- Promote energy efficiency.
- Support public interest energy research.
- Support renewable energy.
- Administer grant funding.
- Plan for and respond to energy emergencies.

California Public Utilities Commission

The California Public Utilities Commission (CPUC) regulates privately owned water, energy, and telecommunications utilities. The CPUC also has responsibility for safety enforcement, including the investigation of all accidents on the property of any public utilities. A Division of Ratepayer Advocates within the CPUC has a statutory mandate to obtain the lowest possible utility rates for service consistent with safe and reliable service levels.

Solid Waste Management

The California Integrated Waste Management Act

The California Department of Resources Recycling and Recovery (CalRecycle) provides regulatory oversight of solid waste management facilities. The California Integrated Waste Management Act (Assembly Bill [AB] 939, Sher, Chapter 1095, Statutes of 1989, as amended) made all California cities, counties, and regional solid waste management agencies responsible for planning and implementing diversion of solid waste from solid waste disposal facilities. CalRecycle oversees and assists local governments to develop and implement the mandates and subsequent legislation.

Enforcement of the regulations is primarily carried out by local enforcement agencies with CalRecycle acting as the state enforcement agency.

The following local enforcement agencies serve the Plan Area.

- Alameda County: Environmental Health Department.
- Contra Costa County: Environmental Health Division.
- Sacramento County: Environmental Management Department
  - City of Pittsburg: Solid Waste Management Department.
- San Joaquin County: Environmental Health Department
  - City of Stockton: CalRecycle Enforcement Agency.
- Solano County: Department of Resource Management.
- Yolo County: County Health Department—Environmental Health.

In addition, AB 939 required every city and county in the state to prepare a source reduction and recycling element with its solid waste management plan that identified how each jurisdiction would meet the mandatory waste diversion goals of 25% by 1995 and 50% by 2000. SB 2202 mandated that jurisdictions continue 50% diversion after January 1, 2000. The purpose of AB 939 is to facilitate the reduction, recycling, and reuse of solid waste to the greatest extent possible. Noncompliance with the goals and timelines set forth within AB 939 can be severe, as the bill imposes fines of up to $10,000 per day on cities and counties not meeting these recycling and planning goals (California Integrated Waste Management Board 2009a).

Further, activities involving removal and disposal of sediments within irrigation and flood control facilities or the use of inert materials in levee or flood control work by federal, state, or local governments may be excluded from solid waste permitting by CalRecycle Tiered Regulatory Placement criteria for construction and demolition waste and inert debris disposal. However, these activities would require permitting by the Regional Water Quality Control Boards in implementing Title 24 Waters of the California Code of Regulations (CCR) and State Water Resources Control Board (State Water Board) requirements for dredging, filling, and disposal of dredge wastes (California Integrated Waste Management Board 2009b).

20.2.3 Regional and Local Plans, Policies, and Regulations

Throughout each of the Delta counties, there are numerous policies and regulations outlined within each jurisdiction's respective general plan, municipal service review, or other regulatory framework (i.e., zoning ordinance, performance standards, and other municipal/county programs). City and county general plans contain policies governing law enforcement services, fire protection services, emergency response services, public schools and libraries, water supply, wastewater, stormwater, solid waste, energy (electricity and natural gas), and telecommunications.

The goals and policies governing the provision of public services and utilities are addressed in local general plans governing the Plan Area. Relevant provisions of local general plans are outlined below. Detailed information regarding service ratios and standards for public services and capacity for services such as schools and solid waste management are provided in Appendix 20A.

20.2.3.1 County General Plans

Alameda County General Plan

The Alameda County General Plan is separated into three planning areas: Eden, Castro Valley, and East County. Each planning area has its own general plan document. The Plan Area lies only within the planning area of the *East County Area Plan*.

Law Enforcement

The median emergency response time for all Alameda County law enforcement service providers is 4:25 minutes and the staffing level is approximately 1.6 county police service providers per 1,000 residents (Kahn/Mortimer/Associates et al. 2010:9-10).

The policies in the East County Area Plan establish general guidance for Alameda County law enforcement. Policies state that the County will maintain adequate police staffing, performance levels, and facilities to serve existing population and future growth. The East County Area Plan requires new developments to pay their fair share of the costs for providing police services. In addition, the East County Area Plan has a policy that limits development to very low densities where law enforcement response times would average more than 15 minutes (Alameda County 2000:62).

Fire Protection and Emergency Response

Fire departments in Alameda County have a better than 4:53-minute median response time for fire and medical emergencies. This exceeds the National Fire Protection Association guideline of a 6-minute response at least 90% of the time (Kahn/Mortimer/Associates et al. 2010:9-9).

The policies in the East County Area Plan establish general guidance for Alameda County fire protection. Policies state that the County will provide necessary fire and emergency response facilities and personnel to meet residential and employment growth in the area. As with law enforcement, the East County Area Plan generally requires new developments to pay their fair share of the costs for providing fire protection services. The County will adhere to the provisions of the *Alameda County Fire Protection Master Plan*. In addition, the East County Area Plan has a policy that limits development to very low densities where fire and emergency response times would average more than 15 minutes (Alameda County 2000:62).

Libraries

The East County Area Plan does not contain a policy stating that the County shall provide for the development and maintenance of subregional facilities such as libraries (Alameda County 2000:68).

Solid Waste Management

The East County Area Plan contains policies regarding a goal for establishing or promoting minimum construction and demolition waste diversion rates for certain construction projects (Alameda County 2000:39).

Wastewater Management

The East County Area Plan contains policies generally stating that the approval of a new development is conditioned on the availability of adequate, long-term capacity of wastewater

treatment, conveyance, and disposal sufficient to service the proposed development (Alameda County 2000:63–66).

Water Supply and Water Treatment

The East County Area Plan contains policies generally stating that the approval of new development will be conditional on the availability of sufficient water for the project and that existing conditions should be considered in determining water availability (Alameda County 2000:63–65).

Utilities

The East County Area Plan requires that the County require new developments to locate utility lines underground, whenever feasible (Alameda County 2000:69).

Contra Costa County General Plan

The Public Facilities/Services Element in the *Contra Costa County General Plan 2005–2020* establishes goals and policies that address the provision of public facilities and services in Contra Costa County, including policies regarding routine law enforcement service and fire protection (Contra Costa County 2005:7-24 to 7-30).

Law Enforcement

The Contra Costa County General Plan states a goal of providing a high standard of law enforcement protection services for all citizens and properties throughout Contra Costa County. In furtherance of this goal, the general plan contains the following policies.

- Sheriff facility standards of 155 square feet of station area per 1,000 population shall be maintained within the unincorporated area of the County.
- Sheriff patrol beats shall be configured to assure minimum response times and efficient use of resources.
- A maximum response time goal for priority 1 or 2 calls of five minutes for 90% of all emergency responses in central business district, urban and suburban areas.
- Levels of service above the county-wide standard required by unincorporated communities shall be provided through the creation of a County Service Area or other special governmental unit.

Fire Protection and Emergency Response

To ensure a goal of maintaining high standards of fire protection, emergency, and medical response services for all citizens and properties throughout Contra Costa County, the County keeps a policy of striving to reach a maximum running time of 3 minutes and/or 1.5 miles from the first-due station, and a minimum of three firefighters to be maintained in all central business district, urban, and suburban areas. The County will strive to achieve a total response time (dispatch plus running and set-up time) of 5 minutes in the central business district, urban, and suburban areas for 90% of all emergency responses. The County has a policy of requiring new development to pay its fair share of costs for new fire protection facilities and services.

With respect to open space development, the general plan requires that a set of special fire protection and prevention requirements be developed for inclusion in development standards and

that fire-fighting equipment access be provided to open space areas in accordance with the Fire Protection Code and to all future development in accordance with Fire Access Standards.

Fire protection agencies must be afforded the opportunity to review proposed projects and submit conditions of approval for consideration to determine whether: (1) there is an adequate water supply for firefighting; (2) road widths, road grades, and turnaround radii are adequate for emergency equipment; and (3) structures are built to the standards of the Uniform Building Code (UBC), the Uniform Fire Code, other state regulations, and local ordinances regarding the use of fire-retardant materials and detection, warning, and extinguishment devices.

Public Schools

The Contra Costa General Plan contains policies attempting to reduce the effects of new residential development on the ability of the County to provide adequate primary, secondary, and college facilities.

Libraries

The County has adopted a policy of maintaining and improving services provided by the County library system by providing adequate funding for ongoing operations, and by providing new library facilities to meet the needs of County residents, particularly in growing areas where library service standards are not being met.

Solid Waste Management

Solid waste management policies and implementation measures are outlined in the Contra Costa County General Plan Public Facilities/Services Element, Solid Waste Management section (Contra Costa County 2005:7-33 to 7-35). These policies are intended to ensure the adequate, safe, and cost-effective removal of solid waste from residences and businesses. The Contra Costa General Plan has a goal of providing adequate disposal capacity at landfills for the County's solid waste and to divert as much waste as feasible from landfills through recover and recycling.

In furtherance of this goal, the County has a policy of considering solid waste disposal capacity in county and city land use planning and permitting activities, along with other utility requirements, such as water and sewer service. Additionally, the County has a policy of encouraging solid waste resource recovery (including recycling, compositing, and waste to energy) so as to extend the life of sanitary landfills. Review and approval of development applications must be carried out in accordance with the Integrated Waste Management Plan.

Wastewater Management

Goals and policies for wastewater management are detailed in the Contra Costa County General Plan Public Facilities/Services Element, within the Sewer Service section (Contra Costa County 2005:7-14 to 7-16). The Contra Costa General Plan has a service goal of providing sewer collection, treatment, and disposal facilities adequate to meet the current and projected needs of existing and future residents and to ensure that new development pays the costs related to the need for future increased sewer capacity. In support of these goals, the general plan requires that at the project approval stage, the County must require new development to demonstrate that wastewater treatment capacity can be provided. The County will determine whether the capacity exists within the wastewater treatment system if a development project is built within a set period of time, or capacity will be provided by a funded program or other mechanism. This finding will be based on

information furnished or made available to the County from consultations with the appropriate wastewater agency, the applicant, or other sources.

The general plan encourages beneficial uses of treated wastewater including marsh enhancement and agricultural irrigation and states that such wastewater reclamation concepts are to be incorporated into resource management programs and land use planning.

Water Supply and Water Treatment

Goals and policies addressing water services are presented in the Contra Costa County General Plan Public Facilities/Service Element, Water Services section (Contra Costa County 2005:7-10 to 7-11). These policies include assurance of meeting regulatory standards for water delivery, water storage, and emergency water supplies to residents.

The general plan espouses goals of assuring potable water availability in quantities sufficient to serve existing and future residents and ensuring that new development pays the costs related to the need for future increased water system capacity. In support of these goals, the general plan requires that during the project approval stage, the County must require new development to demonstrate that adequate water quantity and quality can be provided. The County will determine whether the capacity exists within the water system if a development project is built within a set period of time, or capacity will be provided by a funded program or other mechanism. This finding will be based on information furnished or made available to the County from consultations with the appropriate water agency, the applicant, or other sources.

Sacramento County General Plan

Within the Sacramento County General Plan, the Public Facilities Element and Safety Element outline specific goals, objectives, policies, and implementation measures that provide guidance and regulation for the provision of public services and utilities within Sacramento County.

Law Enforcement

The Sacramento County General Plan Public Facilities Element states that demand for local law enforcement protection already exceeds the supply of resources. Growing demand and a relatively slower growing resource base leads to an inability to maintain historic levels of service. In an attempt to improve service and meet growing needs, the County has adopted a policy to plan and develop law enforcement facilities in unincorporated areas, and designing neighborhoods for crime prevention (Sacramento County 2011:32–34).

Fire Protection and Emergency Response

The Sacramento County General Plan Public Facilities Element includes a policy requiring new development to provide access arrangements pursuant to the requirements of the California Fire Code. Alternative methods of fire protection and access must be instituted if access is reduced to emergency vehicles. The County will also provide for review of all projects by fire districts having jurisdiction, and maintain fire district representation on the Subdivision Review Committee (Sacramento County 2011:36–39).

Public Schools

The general plan Public Facilities Element section on public schools primarily deals with the building or expansion of school facilities. However, the general plan has a goal of achieving a quality learning environment for Sacramento's children by meeting the state standards for school enrollment and school site size (Sacramento County 2011:20–24).

Libraries

The general plan Public Facilities Element section on libraries primarily addresses the building or expansion of library facilities, both to meet current unmet needs, as well as to meet needs created by new residential development (Sacramento County 2011:28).

Solid Waste Management

The Public Facilities Element of the general plan states that the county landfill has enough capacity to meet demand through 2037. In order to assist in meeting this capability, the County supports implementation of recycling programs for the unincorporated areas of Sacramento County through the Source Reduction and Recycling Element of the County Integrated Waste Management Plan pursuant to the requirements of AB 939 (Sacramento County 2011:15).

Wastewater Management

The general plan Public Facilities Element contains a policy of not permitting development which would cause sewage flows into the trunk or interceptor system which would cause an overflow. Additionally, the County is to review all proposed development projects within the urban policy area for appropriate easements and facility needs, and identify potential capacity problems and suggest changes from the facilities identified in the sewerage system expansion documents (Sacramento County 2011:8–11).

Connection fees are imposed on new development, on previously unserved properties and for previously served properties where redevelopment requirements exceed the basic capacity allocation. Treatment plant upgrading and existing trunk and interceptor replacement or improvement will be funded by all users through sewer service charges. New development projects which require extension or modification of the trunk or interceptor sewer systems are to be consistent with sewer facility plans and participate in established funding mechanisms. The general plan indicates that the County should discourage development projects that are not consistent with sewer master plans or that rely on interim sewer facilities, particularly if the costs of those interim facilities may fall on ratepayers.

New development that will generate wastewater for treatment at the Sacramento Regional Wastewater Treatment Plant (SRWTP) is not to be approved if treatment capacity at the SRWTP is not sufficient to allow treatment and disposal of wastewater in compliance with the SRWTP's National Pollutant Discharge Elimination System (NPDES) Permit (Sacramento County 2011).

Water Supply and Water Treatment

The goals and policies of Sacramento County's general plan Public Facilities Element primarily revolve around new treatment and distribution facilities. However, the general plan states that new development proposals are to be reviewed to ensure water provisions requirements of the general plan are satisfied (Sacramento County 2011:5).

Energy

Rising energy demands within the county and regionally will require new infrastructure. In order to effectively site new infrastructure in a manner that protects the county's visual and aesthetic resources to the best extent possible, the general plan Public Facilities Element has adopted a policy that new transmission lines constructed within existing and planned urban areas should utilize existing transmission corridors whenever practical. Secondary preferred locations are adjacent to railway and freeway corridors when feasible.

It is the policy of Sacramento County not to locate public school buildings or grant entitlements for private school buildings within, or directly adjacent to power line corridors without the appropriate buffer zone. The construction of transmission lines proximate to an existing and/or planned public or private school site and subject to the County Siting Process (100 kV or greater) should also comply with the County's distance criteria unless compliance with these setbacks would result in a greater electromagnetic field (EMF) effect on other adjacent uses (Sacramento County 2011:47–51).

San Joaquin County General Plan

The San Joaquin County General Plan Community Development chapter and Public Health and Safety chapter outline specific goals, policies, and implementation measures that provide guidance and regulation for the provision of public services and utilities within San Joaquin County.

Law Enforcement

Policies regarding routine law enforcement service are presented in the Public Health and Safety chapter of the San Joaquin County General Plan (San Joaquin County 1992b:V-9). These policies are intended to ensure that protection services and facilities are provided for the public's health and safety, and that law enforcement hazards are prevented through physical planning.

The general plan adopts a standard for law enforcement of 1.5 line officers assigned to patrol duty per 1,000 residents in urban communities and 1 line offer assigned to patrol duty per 1,000 residents in the remaining unincorporated portions of the county. Law enforcement hazards are to be determined during project review and prevented or mitigated to acceptable levels of risk.

Fire Protection and Emergency Response

Policies regarding routine fire protection service are presented in the San Joaquin County General Plan Public Health and Safety chapter (San Joaquin County 1992b:V-8). These policies are intended to ensure that fire protection services and facilities are provided for the public's health and safety, and that fire hazards are prevented through physical planning.

The general plan adopts a policy that fire hazards are to be determined during project review and prevented or mitigated to acceptable levels of risk.

Public Schools

Most school districts in San Joaquin County are currently at capacity. Educational facilities are addressed in the Community Development chapter, Public Facilities—Educational Facilities section of the general plan. The general plan establishes goals and policies to ensure adequate educational facilities for the county (San Joaquin County 1992a:IV-122–IV-123).

Libraries

With the expected increase in population in the next decade, and the limitations of public funds, the major challenge for the library system will be to continue to provide the existing level of service to its patrons. Libraries are addressed in the Community Development chapter, Public Facilities—Library Facilities and Services section of the general plan. The general plan establishes goals and policies to ensure adequate public library facilities and services for the county (San Joaquin County 1992a:IV-124).

Solid Waste Management

Solid waste management and disposal is governed by the San Joaquin County Waste Management Plan. This plan defines programs for recycling, resource recovery, and disposal. All development in the county must be consistent with the County's Waste Management Plan. The County promotes solid waste source reduction, composting, and recycling.

Wastewater Management

Presently, all the community treatment facilities in San Joaquin County are operating at or very near capacity. Most of the smaller wastewater treatment plants in the county are or will be operating at capacity when existing commitments for service are filled. The Community Development chapter, Infrastructure Services—Wastewater Treatment section of the general plan establishes goals and policies for the collection and treatment of wastewater in the county (San Joaquin County 1992a:IV-102–IV-104).

Water Supply and Water Treatment

The Community Development chapter, Water Supply section of the San Joaquin County general plan contains policies intended to maintain a safe and adequate public water supply within the county (San Joaquin County 1992a: IV-105–IV-108).

Utility Corridors (Energy and Communications)

The Community Development chapter, Infrastructure Services section of the San Joaquin County General Plan contains policies intended to minimize negative visual impacts of overhead transmission lines and to regulate utility corridors which may limit other types of land uses (San Joaquin County 1992a: IV-112–IV-113).

The general plan adopts policies requiring that the environmental assessment of new or expanded utility lines must address the potential adverse effects on development as a result of a rupture or malfunction, and must identify mitigation measures to be adopted by the utility to safeguard against such accidents and to respond in the event of an accident. Additionally, the County will encourage the use of existing transmission corridors for new lines, except in the case of electrical transmission lines over 500 kV, which for safety reasons are to be separated from existing corridors by at least 500 yards. Utilities proposing to expand existing transmission or communications lines must coordinate with the County.

Solano County General Plan

The *Solano County General Plan* Public Facilities and Services chapter outlines specific goals, policies, and implementation programs that provide guidance and regulation for the provision of public services and utilities within Solano County.

Law Enforcement

The Solano County General Plan contains a goal of providing an effective and responsive level of law enforcement protection through the Solano County Office of the Sheriff and in coordination with city police departments. In furtherance of this goal, the general plan adopts a policy of maintaining adequate staffing levels, equipment, and resources as necessary to provide essential law enforcement and emergency services (Solano County 2008:PF-31–PF-33).

Fire Protection and Emergency Response

In an effort to ensure accessible and cost-effective fire and emergency medical service throughout the county, the County has adopted a policy requiring identification and incorporation of fire protection and emergency response measures in the review and approval of new projects (Solano County 2008:PF-28–PF-31).

Public Schools

The schools in Solano County have adequate current capacity and facilities for the student population. The Public Facilities & Service chapter, Public Education section of the Solano County General Plan contains policies intended to address a variety of needs, including future school facilities and where to locate them, vocational training, recreational opportunities, increased cooperation between the school districts and the County, and financing (Solano County 2008:PF-33–PF-36).

Libraries

The Public Facilities & Service chapter, Community Facilities section of the Solano County General Plan contains policies intended to help meet the need for library services and facilities (Solano County 2008:PF-37–PF-39). The population of Solano County is outgrowing the library facilities when compared to the service standards outlined in the Solano County Library Facilities Master Plan completed in 2001. For rural areas, which comprise the majority of the unincorporated county, Solano County has adopted service standards of 3.2 volumes per capita, five seats per 1,000 population, and 0.4 computers per 1,000 population. Currently, the County provides 1.6 volumes per capita, 1.9 seats per 1,000 population, and 0.4 computers per 1,000 population.

Solid Waste Management

Solano County contains two landfills which accept solid waste in Solano County. Both facilities contain long-term capacity for over 25 years. The general plan requires that demolition projects submit a plan to maximize reuse of building materials at the time of permit application (Solano County 2008: PF-20–PF-24).

Wastewater Management

The Public Facilities & Service chapter, Sewer and Wastewater section of the Solano County General Plan contains policies intended to maintain a safe and adequate wastewater service within the county (Solano County 2008:PF-14–PF-20).

Water Supply and Water Treatment

The Solano County General Plan contains a policy of requiring areas identified with marginal water supplies to require evidence of adequate water supply and recharge to support proposed development and water recharge and to minimize the consumption of water in all new development. Plans for new development projects are to be reviewed to ensure that they have provided for water onsite or through a public agency (Solano County 2008:PF-7–PF-14).

Utilities

The general plan contains policies and implementation programs directed at locating future utility alignments and avoiding disruption to natural areas (Solano County 2008:PF-39–PF-41). Among the policies adopted by the general plan are that parallel or existing rights-of-way for gas, electric, and telephone utility alignments be used in a manner that avoid heavily developed areas. Additionally, the general plan contains a policy that transmission lines be located, designed, and constructed in a manner that minimizes disruption of natural vegetation, agricultural activities, scenic areas, and avoids unnecessary scarring of hill areas.

Yolo County General Plan

The Yolo County General Plan Public Facilities and Services Element and Conservation and Open Space Element outline specific goals, policies, and implementation programs that provide guidance and regulation for the provision of public services and utilities within Solano County.

Law Enforcement

In 2008, Yolo County had an average of 3.9 sworn officers per 1,000 people. This was a decrease from 2006, where Yolo County had a ratio of 4.0 sworn officers per 1,000 people. Nationwide, the ratio was 2.4 sworn officers per 1,000 people. Yolo County experiences a low rate of crime, including violent crimes. In support of the goal to enhance public safety to prevent crime and improve neighborhood relations, the County has adopted several policies (County of Yolo 2009:PF-17–PF-19).

- Strive to maintain an average response time of 12 minutes for 90% of priority law enforcement calls in the rural areas (Policy PF-4.2).
- Maintain a minimum ratio of 1.75 sworn officers per 1,000 service population, which is defined as both the number of residents and employees located solely within the unincorporated area. For the purposes of this policy, an employee is weighted at 0.26 the cost of service for a resident. Maintenance of this ratio includes the necessary facilities, equipment, and non-uniformed personnel to support that ratio. Commercial and/or industrial projects, businesses, events, and other proposals that generate higher demands for Sheriff's services shall be evaluated to determine if additional resources are needed to address potential fiscal impacts (Policy PF-4.3).

- Incorporate law enforcement concerns into land use planning, including identifying and mitigating potential law enforcement hazards of new development during the project review and approval process (Policy PF-4.4).

Fire Protection and Emergency Response

The County has adopted a goal of supporting fire and emergency service providers to enhance the protection of life and property. To attain this goal, Yolo County has adopted a policy of encouraging fire districts and other emergency medical service providers to achieve National Fire Protection Association standards of an average response time for emergency calls of 9 minutes at least 90% of the time in the unincorporated communities and 15 minutes at least 80% of the time in rural areas, with the exception of remote areas (requiring a travel distance of more than 8 miles) (County of Yolo 2009:PF-20–PF-24).

Public Schools

The Public Facilities & Service chapter, Schools section of the Yolo County General Plan contains policies intended to address a variety of needs, including future school facilities and where to locate them, recreational opportunities, increased cooperation between the school districts and the County, and financing (County of Yolo 2009:PF-24–PF-29).

Libraries

The County currently provides 2.5 volumes per capita and 0.47 square feet of library space per capita. The system is funded by property taxes, state funds, library fines and fees, and donations. A bookmobile has historically provided service in other areas of the county but is not currently in service. In order to provide library services to meet the changing informational and social needs of each community, the Library Services section of the general plan (County of Yolo 2009: PF-29–PF-31) requires the following action under its implementation program.

- Meet the following minimum standards for new and existing libraries: 2.875 volumes per capita, with a minimum collection of 6,000 volumes;
    - 0.75 to 1.0 square feet of library space per capita, with a minimum size of 1,000 square feet;
    - 3,000 audio and video recordings per branch library;
    - 10 magazine and newspaper subscriptions per 1,000 residents;
    - 2.5 reader seats per 1,000 residents;
    - One computer per 750 to 1,250 residents (minimum 10 computer workstations per branch library);
    - Trained staff to provide visitor-focused library programs and services (Action PF-A38).

Solid Waste Management

The general plan has adopted a policy requiring salvage, reuse, or recycling of construction and demolition materials and debris at all construction sites, as well as encouraging use of salvaged and recycled materials in construction (County of Yolo 2009:PF-34–PF-41).

Wastewater Management

The Yolo County General Plan has a goal of providing efficient and sustainable solutions for wastewater collection, treatment, and disposal. In furtherance of this goal, the general plan requires discretionary projects to demonstrate adequate long-term wastewater collection, treatment, and disposal capacity, including full funding for land acquisition, facility design and construction, and long-term operations and maintenance for needed wastewater treatment and disposal facilities (County of Yolo 2009:PF-3–PF-10).

Water Supply and Water Treatment

Goals and policies regarding municipal water systems and water resources are addressed in the Conservation and Open Space Element (County of Yolo 2009:PF-60–PF-79).

The Plan contains a policy of facilitating and encouraging the development of new reliable future sources of supply consistent with local land use plans and regional water needs, including the completion of the Tehama-Colusa Canal. Additionally, the County has a policy of ensuring that regional, State and federal water projects protect local water rights and areas of origin.

Proposals to convert land to uses other than agriculture, open space, or habitat must demonstrate that groundwater recharge will not be significantly diminished. New development and redevelopment will be encouraged to use reclaimed wastewater, where feasible, to augment water supplies and to conserve potable water for domestic purposes. All development will be required to have an adequate water supply. Significant discretionary projects must demonstrate adequate long-term and sustainable water supplies by preparing a verified water supply assessment demonstrating a long-term, reliable water supply satisfactory under normal and above normal rainfall conditions, as well as drought conditions. In water districts where there is insufficient water to serve new development, new developments will be required to offset demand so that there is no net increase in demand.

Utilities

The Utilities and Communication Technology section of the Public Facilities & Services chapter of the General Plan addresses power generation and transmission, as well as information systems such as telephone and wireless communications. The Plan requires underground utilities in new development within unincorporated communities, where feasible and requiring utility lines and pipelines to be installed in ways that avoid conflicts with agricultural operations (County of Yolo 2009:PF-43–PF-47).

20.2.3.2 City General Plans

City of Tracy General Plan

Law Enforcement

The City of Tracy Police Department divides calls into three categories, Priority 1, 2, and 3 calls. Priority 1 calls are defined as life threatening situations. Priority 2 calls are not life threatening, but require immediate response. Priority 3 calls cover all other calls received by the police. Average response time for Priority 1 calls within the city limits is approximately six to eight minutes. The response time for Priority 2 and 3 calls is, on average, 22 minutes. The 2008 ratio of police per

thousand population was just over one per 1,000 population, according to the City of Tracy General Plan Public Facilities and Services Element (City of Tracy 2011:7-6).

The Public Facilities and Services Element contains policies that the City will maintain adequate police staffing, performance levels, and facilities to serve existing population and future growth. Policies also ensure that new developments will pay their fair share of the costs for providing police services, and promote coordination between land use planning and law enforcement (City of Tracy 2011:7-7, 7-8).

Fire Protection and Emergency Response

The Tracy Fire Department operates seven fire stations and an administrative office. Three fire stations are within the incorporated area of the City of Tracy, three are in the surrounding rural Tracy area, and one is located in the planned community of Mountain House. Medical transport is provided by private ambulance. American Medical Response is the exclusive emergency ambulance service provider in San Joaquin County (City of Tracy 2011:7-2).

The Public Facilities and Services Element contains policies primarily geared toward addressing growth from residential development. In general, the city has policies that will provide necessary fire and emergency response facilities and personnel to meet residential and employment growth in the area. As with law enforcement, the city requires new developments to pay their fair share of the costs for providing fire protection services (City of Tracy 2011:7-4).

Libraries

There is one library located in Tracy. The 20,000 square foot building is located on 1.3 acres in central Tracy within Lincoln Park. It is owned and maintained by the City. The Tracy General Plan Public Facilities and Services Element objectives include providing sufficient library service to meet the city's needs. Policies include expanding library services as development and growth occur, and ensuring new residential development pays their fair share of the costs for providing library services (City of Tracy 2011:7-16).

Solid Waste Management

The Tracy General Plan contains policies regarding reduction in solid waste through recycling and resource conservation, and ensuring adequate solid waste disposal services (City of Tracy 2011:7-19).

Wastewater Management

The Tracy General Plan Public Facilities and Services Element contains policies stating that the approval of a new development is conditioned on the availability of sufficient capacity of wastewater collection and treatment to service the proposed development. In addition, new development shall fully fund the cost of wastewater treatment and disposal facilities (City of Tracy 2011:7-33).

Water Supply and Water Treatment

The Tracy General Plan contains objectives and policies generally stating that the City shall meet the demands of future development with adequate water supply and infrastructure. Policies also state that the City shall establish water demand reduction standards for new development (City of Tracy 2011:7-25).

Utilities

The Tracy General Plan Public Facilities and Services Element requires new developments to locate utility lines underground (City of Tracy 2011:3-17).

City of Oakley General Plan

Law Enforcement

The City of Oakley contracts with the Contra Costa County Sheriff's Department. The Sheriff's Department provides personnel, dispatch, records, and basic equipment services to the City of Oakley Police Department (City of Oakley 2002:4-18). The City of Oakley 2020 General Plan Growth Management Element contains general policies ensuring that the City will maintain adequate personnel and facilities to provide adequate response times (City of Oakley 2002:4-7).

Fire Protection and Emergency Response

The East County Fire Protection District is located in eastern Contra Costa County and provides fire protection service to 82,000 residents. The District has one station, Station 93, located in the City of Oakley (City of Oakley 2002:4-17). The Growth Management Element contains policies and programs primarily geared toward addressing growth from residential development. In general, the city has policies that will provide necessary fire and emergency response facilities and personnel to meet residential and employment growth in the area. Under policy 4.4.2, the city requires new developments to pay their fair share of the costs for providing fire protection services.

Libraries

The Oakley Branch Library is the only library in the city and it is located in Freedom High School. Policy 4.3.4 states that the city will maintain high quality library services for residents of Oakley (City of Oakley 2002:4-6).

Solid Waste Management

The Oakley 2020 General Plan contains policies regarding reduction in solid waste through recycling and composting, and ensuring adequate solid waste disposal services (City of Oakley 2002:4-9).

Wastewater Management

The Oakley 2020 General Plan Growth Management Element contains policies stating that the approval of a new development is conditioned on the availability of sufficient capacity of wastewater collection and treatment to service the proposed development. In addition, new development to pay its fair share of infrastructure costs (City of Oakley 2002:4-11).

Water Supply and Water Treatment

The Oakley 2020 General Plan Growth Management Element contains goals and policies generally stating that the City shall assure the provision of potable water for existing and future residents. Policy 4.8.4 states that new development will be required to pay costs related to the need for increased water system capacity (City of Oakley 2002:4-10).

Utilities

The Oakley 2020 General Plan does not address utilities.

City of Stockton General Plan

Law Enforcement

Law enforcement services for the City of Stockton are provided by the Stockton Police Department. The Stockton Police department serves all areas within the city limits (56 square miles). The current officer to citizen ratio is about 1 to 693, with an emergency response time between 3 and 5 minutes depending on time of day, location, and the number of requests for services. (City of Stockton 2007:9-1).

General plan policies include promotion of public safety awareness programs and implementation of design features as a means to reduce crime. In addition, policies establish the maintenance of a standard response time of 5 minutes, and a ratio of 1.5 sworn officers to 1,000 residents (City of Stockton 2007:9-12).

Fire Protection and Emergency Response

The Stockton Fire Department (SFD) serves the City of Stockton and its surrounding unincorporated area. The SFD maintains 13 locations dispersed throughout the general plan Planning Area. The SFD has 287 line suppression personnel. The ratio of firefighters to population served is 0.91 firefighters per 1,000 population. All 287 personnel are certified as emergency medical technicians (EMT), with 111 firefighters certified to EMT-Paramedic level. The Department is also supported by 38 civilian employees. The 2035 General Plan Goals and Policies Report contains policies primarily geared toward addressing growth from residential development. In general, the city has policies that will provide necessary fire and emergency response facilities and personnel to meet residential and employment growth in the area. As with law enforcement, the city requires new developments to pay their fair share of the costs for providing fire protection services (City of Stockton 2007:9-13).

Libraries

The Stockton-San Joaquin County Public Library (SSJCPL) system includes a central library in Stockton (Cesar Chavez Central Library) plus four branch libraries in the general plan Planning Area. Policies in the general plan incorporate the public's desire for increased library services, and include support for community center facilities (City of Stockton 2007:9-17).

Solid Waste Management

The 2035 General Plan contains policies regarding reduction in solid waste through recycling and resource conservation, and ensuring adequate solid waste disposal services (City of Stockton 2007:9-11).

Wastewater Management

The 2035 Stockton General Plan contains policies that include the need for proper facility sizing to meet long-term needs, wastewater reuse, and protection of critical infrastructure (City of Stockton 2007:9-8).

Water Supply and Water Treatment

The 2035 Stockton General Plan contains policies that reflect the City's need for facilities able to meet long-term demands. Policies focus on the need for the identification of new water sources and protection and expansion of existing surface water rights to meet growing demands (City of Stockton 2007:9-7).

Utilities

The 2035 Stockton General Plan contains policies that focus on the increased incorporation of communications technologies within the City and establish the design guidelines for their location. Policies also state that the City shall coordinate with gas and electric service providers in planning facility expansion to meet future needs (City of Stockton 2007:9-12–9-16).

City of Sacramento General Plan

Law Enforcement

The Public Health and Safety Element contains policies that the City will maintain adequate police staffing, performance levels, and facilities to serve existing population and future growth. Policies also ensure that new developments will pay their fair share of the costs for providing police services, and promote coordination between land use planning and law enforcement (City of Sacramento 2009:2-275).

Fire Protection and Emergency Response

The Public Health and Safety Element contains policies primarily geared toward addressing growth from residential development. In general, the city has policies that will provide necessary fire and emergency response facilities and personnel to meet residential and employment growth in the area. As with law enforcement, the city requires new developments to pay their fair share of the costs for providing fire protection services (City of Sacramento 2009:2-280).

Libraries

The Sacramento 2030 General Plan Education, Recreation, and Culture Element contains policies that provide for the expansion of library resources and new facilities commensurate with population growth (City of Sacramento 2009:2-262).

Solid Waste Management

The Sacramento 2030 General Plan Education, Recreation, and Culture Element contains policies that support a wide range of programs to reduce waste, use recycled building materials, and support the recycling of construction and landscaping waste (City of Sacramento 2009:2-233).

Wastewater Management

The Sacramento 2030 General Plan Environmental Resources Element contains policies that provide for adequate and reliable sewer service by requiring master planned infrastructure for new developments to meet ultimate capacity needs and avoid future replacement (City of Sacramento 2009:2-227).

Water Supply and Water Treatment

The Sacramento 2030 General Plan Environmental Resources Element contains policies that require new development to protect water quality through various methods including site design, best management practices (City of Sacramento 2009:2-304).

Utilities

The Sacramento 2030 General Plan Utilities Element contains policies that provide for high-quality and efficient utility services throughout the city, which promote sustainability and seek to limit impacts to environmentally sensitive areas (City of Sacramento 2009:2-219).

20.3 Environmental Consequences

This section describes potential direct (both temporary and permanent) and indirect effects on public services and utilities that would result with implementation of each alternative. An analysis of the consistency of the alternatives with applicable general plans and local policies is also provided. Note that the impact analysis separates each of the alternatives' proposed features into two categories: *proposed water conveyance facilities*, which are examined at the project level, and *proposed conservation measures*, which are examined at the program level.

20.3.1 Methods for Analysis

This section describes potential effects on public services and utilities that would result with implementation of each alternative. The potential for each alternative to (1) adversely affect the ability of service agencies to provide adequate service to the construction sites or within existing service areas, or (2) require expansions or upgrades of facilities or infrastructure that could result in adverse effects are analyzed according to the criteria described in *Determination of Adverse Effects* below.

The following methods were used to gather information for the study area.

- Collect and review relevant geographic information system (GIS) data to locate law enforcement and fire protection facilities, emergency access routes, other emergency services, hospitals, public schools, and libraries within the study area. Additionally, GIS data were used to identify solid waste (landfills), water, and wastewater facilities.
- Reviewed conveyance facility alignments and Restoration Opportunity Areas (ROAs) against GIS information for police/sheriff stations, fire stations, hospitals, public schools, and libraries, landfills, water and wastewater facilities to identify potential direct and indirect conflicts with individual facilities.
- Contacted public services and utility providers via telephone and electronic correspondence (email) to obtain or confirm the locations of current and planned services and facilities in the study area.
- Utility conflicts were determined for each alignment by selecting utility features within/partially within the alignment and constructability footprints (above and belowground footprints depending on the utility type). Utility features were identified from existing sets of utility data within ArcGIS or by visual inspection of aerial photography of the footprint areas. Utility

datasets came from the California Department of Conservation, National Hydrography Dataset, Ventyx, Bureau of Reclamation, ESRI base data for California, and the Delta Risk Management Strategy (DRMS).

- An analysis of the alternatives and GIS data was used to determine if public services and utilities within the Plan Area would permanently be affected by the operations of the BDCP alternatives, including conveyance-related activities and operations, facilities, and restoration actions through an increase in population demand or through effects on the circulation network or existing infrastructure.

20.3.1.1 Public Services

Law Enforcement

Law enforcement could be affected by construction in multiple ways, as listed below.

- The number of construction personnel that would move into the Plan Area to construct the water conveyance facilities associated with BDCP could be substantial enough to cause an increased demand for law enforcement services.
    - In the communities in which workers moving to the Plan Area may relocate.
    - Increased demand for construction property protection.
    - Increased demand associated with construction-related accidents.
- Construction may physically encroach upon a law enforcement station or facility.
- Construction, road detours, and associated traffic congestion (delays) could increase the need for traffic patrol and other law enforcement activities during construction. Additional analysis of emergency route management and whether construction could result in delays or road closures, possibly making areas inaccessible to law enforcement services is addressed in Chapter 19, *Transportation*.
- Funding for law enforcement could be affected by a decrease in taxable parcel revenue. This is addressed in Chapter 16, *Socioeconomics.*

To analyze the potential for these conditions, each law enforcement facility in the study area was mapped and compared to the construction footprint and anticipated construction activities for CM1 for each alternative.

Fire Protection

Fire protection entities have the potential to be affected by construction activities in the same ways as law enforcement agencies. The methods used to determine effects on fire protection services are the same as outlined above for law enforcement agencies.

Hospitals

Hospitals and medical facilities could be affected by construction if the BDCP alternatives physically affect a hospital in the study area (Appendix 20A, Table 20A-3). To analyze the potential for this effect, each hospital was mapped and compared to the construction footprint for each action alternative.

Schools

For the purposes of this analysis, only public schools and school districts licensed with the State of California Department of Education were identified and analyzed to assess potential effects of implementing the BDCP. Although the primary focus of this analysis is for potential effects to public schools, a survey was conducted using GIS data on private schools, including day care centers, to determine the potential for BDCP alternatives to encroach upon private schools. This survey resulted in negative results; the BDCP alternatives are not expected to encroach upon or alter the property or buildings of a private school in the study area. Public schools could be affected by construction if the BDCP alternatives encroach upon or alter the property or buildings of a school in the study area (Appendix 20A, Table 20A-4). To analyze the potential for these conditions, each school was mapped and compared to the construction footprint for each action alternative.

As described in Chapter 16, *Socioeconomics,* the majority of BDCP construction workers will come from the existing 5-County labor force. However, there is a possibility that construction of the BDCP alternatives could also cause an increase in school enrollment in some areas resulting from a potential increase in population from construction personnel with school-age children. An increase in school-age children may result in certain schools and/or districts exceeding their student capacity. As is also discussed in Chapter 16, *Socioeconomics*, the five counties comprising the Delta have sufficient housing stock to accommodate workers who may choose to relocate to the region for the duration of the construction period, and new housing construction is not expected to result from the minor increase in population. To assess potential effects on public schools, the increase in the number of new students associated with those employees who would move to existing housing within the Plan Area for BDCP construction was estimated based on the California Department of Education student generation rate to estimate students generated by residential projects. Based on the this rate (outlined in Section 1859.2 of the State Allocation Board Regulations), the average residential unit generates 0.7 students, including 0.5 elementary or middle school students and 0.2 high school students. These rates are based on statewide sampling of dwelling unit types, households, and demographic characteristics.

Schools could also be affected by a decrease in taxable parcel revenue, resulting in reduced funding. This is further addressed in Chapter 16, *Socioeconomics*.

Libraries

Libraries have the potential to be affected by construction activities if the alternatives affect library property in the study area (Appendix 20A, Table 20A-5). To analyze the potential for this condition, each library was mapped and compared to the construction footprint of each action alternative.

Additionally, libraries may be affected by a decrease in taxable parcel revenue, resulting in decreased funding. This is further addressed in Chapter 16, *Socioeconomics.*

20.3.1.2 Utilities

Solid Waste Management

Solid waste facilities could be affected by construction from encroachment on the property of one of the facilities in the study area (Appendix 20A, Table 20A-6) or from the generation of construction waste that could cause a substantial increase in the amount of solid waste in nearby landfills which could exceed predetermined capacities.

To analyze the potential for these conditions, each solid waste facility was mapped and compared to the construction footprint of each action alternative. To analyze the potential for exceeding predetermined capacities of nearby landfills, the landfills that would be utilized during construction were assumed to be within the Plan Area and in nearby communities, except for Solano and Yolo Counties. There are no solid waste facilities in the portions of the study area within Solano and Yolo Counties. The existing capacity of nearby landfills was determined and compared to the anticipated amount of solid waste that would be generated from each of the action alternatives.

Water Services

Construction activities for the action alternatives were reviewed to assess the potential for effects on water service providers and infrastructure. Additionally, the potential for water service providers to be affected by a substantial increase in the demand for water services was analyzed to determine whether there would be a need to construct a new facility to maintain adequate service levels within the study area.

The potential for construction of the proposed conveyance facilities to cause disruptions to agricultural infrastructure in the Plan Area is addressed in Chapter 14, *Agricultural Resources*. Specifically, Chapter 14 addresses potential conflicts with existing agricultural irrigation and drainage facilities as a result of construction.

Wastewater Services

Wastewater services could be affected by construction in the same manner as described above for water services. The methods used to analyze effects of the alternatives on wastewater services were the same as outlined above for water services.

Electricity and Natural Gas

The determination of whether there are sufficient electric or natural gas supplies to serve the construction, maintenance, and operation of the action alternatives, including the habitat conservation measures, is addressed in Chapter 21, *Energy*, which discusses energy sources from the existing SWP pumping plants, and the energy that must be purchased from the electrical transmission grid through DWR's participation in the CAISO energy market.

The analysis provided in this chapter addresses potential disruption to existing electric and natural gas utilities in the study area as a result of the BDCP alternatives. For this analysis, the type of activities that could cause damage to or disruption of underground utilities was reviewed and evaluated against the number and types of utilities that cross the alignments for each alternative to determine the level of potential effect.

Communications

Telecommunications could be affected by construction of the proposed conveyance facility in the same manner as described above for electricity and natural gas utilities. The methods used to analyze effects of the alternatives on telecommunications were the same as outlined above for electricity and natural gas.

20.3.2 Determination of Effects

Effects on public services and utilities may result from construction and operation of the alternatives. Adverse effects under NEPA and significant impacts under CEQA would occur if the alternatives would result in any of the following conditions.

- Result in substantial adverse physical effects associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental effects, for any public services such as those listed below.
    - Police protection.
    - Fire protection.
    - Public schools.
    - Other public facilities (e.g., libraries, hospitals).
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Lack of sufficient water supply available to serve the alternative from existing entitlements and resources, or require new or expanded water supply resources or entitlements.
- Result in a determination by the wastewater treatment provider that would serve the alternative that it has inadequate capacity to serve the alternative's anticipated demand in addition to the provider's existing commitments.
- Generate solid waste that would exceed the permitted capacity of landfills to accommodate the alternative's solid waste disposal needs.
- Not comply with applicable federal, state, and local statutes and regulations related to solid waste.

In addition to the criteria presented above, the alternatives could affect public services and utilities if implementation would result in disruption substantial enough to require temporary or permanent relocation of existing utility systems.

The effect criteria described above are carried forward for analysis in this chapter with the exception of the criteria related to compliance with the regulatory framework for solid waste. The construction and operation of all BDCP alternatives would comply with all regulations related to solid waste, such as the California Integrated Waste Management Act and city recycling programs. Consequently, such effects would not occur and are not discussed further.

With the exception of the No Action Alternative and Alternative 9, each action alternative would involve construction of conveyance facilities for diverting water from the north Delta south to the existing SWP and CVP south Delta export facilities. The alternatives differ primarily in their physical conveyance facility infrastructure, the locations of facilities, and diversion capacities (ranging from 3,000 to 15,000 cubic feet per second [cfs]). Other differences are associated with operational criteria for water supply facilities, habitat conservation measures, and measures to reduce the effects of other stressors on covered species. Specifically, the range of alternatives includes different amounts and types of habitat restoration and enhancement proposed under CM4–CM11. Other

proposed conservation measures (CM12–CM22) do not vary between alternatives, but they are similarly considered in a conservation package.

Additionally, 11 of the proposed conservation measures related to reducing other stressors (listed below and described in detail in Chapter 3, *Description of Alternatives*), which would be implemented under all action alternatives, are not anticipated to result in any meaningful effects on public services and utilities in the study area because the actions implemented under these conservation measures are not, for the most part, land-based or land-focused activities, nor would they be expected to result in any direct or indirect, permanent, or substantial temporary changes in public services and utilities. Consequently, these measures will not be addressed further in this analysis.

- Methylmercury Management (Conservation Measure [CM]12)
- Invasive Aquatic Vegetation Control (CM13)
- Stockton Deep Water Ship Channel Dissolved Oxygen Levels (CM14)
- Localized Reduction of Predatory Fishes (CM15)
- Nonphysical Fish Barriers (CM16)
- Illegal Harvest Reduction (CM17)
- Conservation Hatcheries (CM18)
- Urban Stormwater Treatment (CM19)
- Recreational Users Invasive Species Program (CM20)
- Nonproject Diversions (CM21)
- Avoidance and Minimization Measures (CM22)

20.3.2.1 Compatibility with Plans and Policies

Constructing the proposed water conveyance facility (CM1) and implementing CM2–CM22 could potentially result in incompatibilities with plans and policies related to public services and utilities. Section 20.2, *Regulatory Setting*, provides an overview of federal, state, regional and agency-specific plans and policies applicable to public services and utilities. 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.

As discussed above, the construction and operation of all BDCP alternatives would comply with all regulations related to solid waste, such as the California Integrated Waste Management Act and city recycling programs. Consequently, physical effects associated with these regulations would not occur and are not discussed further.

Public services in the Plan Area such as fire protection services and public schools currently abide by "best practice" standards such as the National Fire Protection Association 1710 Standard, the

National Fire Protection Association 1720 Standard, and standards set by the California Department of Education outlined in their publication, *Guide to School Site Analysis and Development*. BDCP activities will be compatible with these standards during the construction phase as well as the operations and maintenance phase. These "best practice" standards are similar to those that are outlined in most regional and local general plans.

All BDCP alternatives have been designed to remain compatible with the policies concerning utilities and infrastructure within the LURMP for the Primary Zone of the Delta prepared by the DPC. Mitigation Measure UT-6b mirrors Utilities and Infrastructure Policy P-1 of the LURMP and environmental commitments address the other policies outlined in the LURMP. Additionally, the proposed water conveyance facility design is compatible with applicable policies adopted by regional and local general plans.

20.3.3 Effects and Mitigation Approaches

The GIS analysis conducted to compare the construction footprint and activities to public service and utility stations and facilities indicated that none of the alternatives would result in effects on the public services or utilities topics listed below. Therefore, these issues are not discussed further in the alternative analyses presented in this section.

- Physical effect on any law enforcement services facility or property.
- Physical effect on any hospital or medical services facility or property.
- Physical effect on any public school building or property.
- Physical effect on any public library building or property.
- Physical effect on any solid waste facility (landfill or recycling/transfer operation) property.

20.3.3.1 No Action Alternative

NEPA Effects: 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. As described in Chapter 3, *Description of Alternatives*, Section 3.5.1, the No Action Alternative assumptions are limited to existing conditions, programs adopted during the early stages of development of the EIR/EIS, facilities that are 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. Climate change that would occur with or without the BDCP is also part of the No Action Alternative.

As described in Chapter 3, *Description of Alternatives*, Section 3.5.1 the assumptions for the No Action Alternative, as they relate to ongoing SWP/CVP operations, are limited to what is reasonably foreseeable under existing and adopted programs in light of predicted conditions reflecting ongoing climate change. In envisioning No Action conditions nearly half a century away (2060), the Lead Agencies have made some informed judgments about what might happen outside the immediate SWP/CVP context during such an extended time period. For example, it is highly improbable that, over the course of nearly five decades, water systems throughout California will not change in numerous relevant ways. Since such changes could affect how the SWP and CVP under the BDCP would operate within a larger water supply framework, the Lead Agencies have attempted to identify the predictable or foreseeable actions of California water suppliers other than DWR and Reclamation under a long-term scenario in which a BDCP is not approved or implemented.

Table 20-1. Effects on Public Services and Utilities from the Plans, Policies, and Programs for the No Action Alternative

Agency	Program/ Project	Status	Description of Program/Project	Public Services and Utilities Effects
California High Speed Rail Authority	The Altamont Corridor Rail Project	Planning; Alternative Analysis	Project would provide a dedicated passenger rail connection between northern San Joaquin Valley and the San Francisco Bay Area via the Altamont Pass.	Current alternative alignments are located west of Interstate 5 in Stockton and near Tracy. Unlikely to result in effects on services and utilities within the Plan Area.
Department of Water Resources	North Delta Flood Control and Ecosystem Restoration Project	Final EIR completed in 2010	Project implements flood control and ecosystem restoration benefits in the north Delta	Less than significant effects on public services and utilities
Freeport Regional Water Authority and Bureau of Reclamation	Freeport Regional Water Project	Project was completed late 2010. Estimated completion of water treatment plant in 2012	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	No public services and utilities effects identified
Bureau of Reclamation	Delta-Mendota Canal/ California Aqueduct Intertie	Program under development. Final EIS/EIR in 2009. ROD in 2009	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	No adverse effects on public services and utilities identified
Bureau of Reclamation, California Department of Water Resources	South Delta Improvements Program	Ongoing program. Final EIR/EIS 2006	Project to increase water levels and improve circulation patterns and water quality while improving operational flexibility of the State Water Project	No public services and utilities effects identified
California Department of Water Resources	Temporary Barriers Project 2001–2007	Mitigated Negative Declaration 2000	Project to seasonally install up to three rock flow control structures and one rock fish control structure in south Delta channels at various times during a seven-year period (2001–2007), or until permanent flow control structures are constructed. Purpose is to protect San Joaquin salmon migrating through the Delta and provide an adequate agricultural water supply in terms of quantity, quality, and channel water levels to meet the reasonable and beneficial needs of water users in the South Delta Water Agency.	Less than significant effects on public services and utilities

Agency	Program/ Project	Status	Description of Program/Project	Public Services and Utilities Effects
Bureau of Reclamation, USFWS, California Department of Fish and Wildlife	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.	The following significant impacts on utilities were identified: • Damage to Pipelines and/or Disruption of Electrical, Gas, or Other Energy Services during Construction or Restoration Activities • Damage to Utility Facilities or Disruption to Service as a Result of Restoration Determined less than significant after mitigation.
NMFS/ USFWS	2008 and 2009 Biological Opinion	Ongoing	The Biological Opinions issued by NMFS and USFWS establish certain RPAs to be implemented. Some of the RPAs require habitat restoration which may require changes to existing levees and channel improvements.	The following significant impacts on utilities could occur: • Damage to Pipelines and/or Disruption of Electrical, Gas, or Other Energy Services during Construction or Restoration Activities • Damage to Utility Facilities or Disruption to Service as a Result of Restoration

A complete list and description of programs and plans considered under the No Action Alternative is provided in Appendix 3D, *Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions*. As is explained throughout this EIR/EIS, such conditions would likely entail continuing unreliability of SWP/CVP south Delta exports, continuing vulnerability in the south Delta to long-term reductions in water quality due to sea level rise, and continuing vulnerability to potentially severe public health consequences resulting from a major seismic event harming Delta facilities so as to temporarily halt export operations.

Demand on Public Services and Utilities

Because there would be no BDCP-related construction under the No Action Alternative, there would be no adverse effects that are associated with construction of the BDCP alternatives. However, public services such as law enforcement, fire protection, emergency response services, public medical services, public schools, libraries, or other services would operate and expand as needed to appropriately serve the study area in accordance to their respective general plans and applicable local, state, and federal laws pertaining to service levels.

Although it is expected that the No Action Alternative would result in some changes related to the demand for public services and utilities through other planned and permitted projects, it is assumed

that projects included in the No Action Alternative would include typical design and construction practices to avoid or minimize potential impacts on public services and utility systems, and would be subject to a project-level environmental review process to identify potential effects and to include feasible mitigation measures to avoid or substantially reduce potential effects. Although some changes would be likely, the potential for public services and utilities effects under the No Action Alternative would be minor because of the limited development allowed in the Delta primary zone.

Displacement of Public Facilities

Continued implementation of SWP/CVP operations, maintenance, enforcement, and protection programs by federal, state, and local agencies and non-profit groups, as well as projects that are permitted or under construction, would have the potential to disrupt existing public services and utility service systems, displace a public facility or utility, or otherwise require the construction of facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. However, it is assumed that projects included in the No Action Alternative would include typical design and construction practices to avoid or minimize potential impacts on public services and utility systems, and would be subject to a project-level environmental review process to identify potential effects and to include feasible mitigation measures to avoid or substantially reduce potential effects.

Public services and utilities effects under the No Action Alternative would not be adverse.

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. For major earthquakes along larger faults, ground rupture can extend for considerable distances (hundreds or thousands of feet), with associated risks for surface and subsurface structures such as buildings and utilities (e.g., gas or water pipelines). See Appendix 3E, *Potential Seismic and Climate Change Risks to SWP/CVP Water Supplies* for more detailed discussion. In instances of a catastrophic event due to climate change or a seismic event, there would also be a potential for adverse effect to public services (such as emergency response) and facilities (such as hospitals).

***CEQA Conclusion*:** Under the No Action Alternative, public services such as law enforcement, fire protection, emergency response services, public medical services, public schools, libraries, or other services would operate and expand as needed to appropriately serve the Plan Area in accordance with applicable general plans and local, state, and federal laws pertaining to service levels. There would be no BDCP-related disruption to existing utility services because there would be no construction of the action alternatives. This impact would be less than significant. No mitigation is required.

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

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of the proposed water conveyance facilities under Alternative 1A could affect law enforcement, fire protection, and emergency services and facilities through increased demand for services and direct and indirect effects on nearby facilities. Increased service demands would be experienced in the communities in which new construction workers relocate and in the areas in which construction would take place.

Increased Public Service Demands Associated with Workers Relocating to the Study Area

Although Alternative 1A would not result in a permanent increase in population that could tax the ability to provide adequate law enforcement, fire protection services, and medical services, the increase in construction workers anticipated during the construction period of approximately 9 years could increase demands for these services during this period. An estimated peak of 4,390 workers would be needed during construction of the proposed water conveyance facilities (Table 20-2) (Chapter 16, *Socioeconomics*, Table 16-19). It is anticipated that many of these construction jobs would be filled from the existing labor force in the five-county Plan Area region. However, construction of the conveyance tunnels may require specialized skills resulting in recruitment of specially trained workers coming from outside the five-county region. As described in Chapter 16, *Socioeconomics*, Impact ECON-2, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million.

Table 20-2. Estimated Workforce during Peak Construction and Operation and Maintenance[a]

Alternative	Construction Workers	Operation and Maintenance Workers
1A, 2A, 6A	4,390	190
4	3,937	130
7, 8	3,360	190
3	2,850	190
5	1,320	190
1B, 2B, 6B	6,280	200
1C, 2C, 6C	5,300	190
9	3,210	120

[a] Estimated construction and operation expenditures were used as an input to the Impact Analysis for Planning (IMPLAN) model, which applies multipliers to generate estimates of employment and income change for the five-county Plan Area, as provided in Chapter 16, *Socioeconomics.*

Because the construction population would primarily come from the existing five-county labor force which is already served by law enforcement agencies and medical/emergency response services (hospitals) in the Plan Area (Appendix 20A, Tables 20A-1 to 20A-3), and because the minor increase in demand from the worker population that would move into the area to fill specialized jobs (e.g., tunnel construction) would be spread across the large multi-county study area, construction of the

alternative is not anticipated to result in an increased demand on law enforcement, fire protection, or medical services. This effect is not considered adverse.

Increased Public Service Demands Associated with Construction Work Areas and Activities

Constructing the proposed water conveyance facilities could create additional demand for law enforcement, fire protection, or emergency medical services for construction property protection and related to the potential for construction-related accidents associated with hazardous materials spills, contamination, or fires.

The scale and duration of construction required for Alternative 1A could result in increased demand on law enforcement services, especially near major construction sites. As part of the alternative, the DWR would implement an environmental commitment (as discussed in Appendix 3B, *Environmental Commitments*) that would provide 24-hour onsite private security at construction sites. Implementation of this environmental commitment would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection.

Construction of this alternative could also result in increased demands for service from law enforcement, fire protection, and emergency service agencies related to possible increases in construction-related accidents, either at job sites or along haul routes, or other incidents involving hazardous materials. DWR would incorporate environmental commitments into this alternative that would minimize the potential for construction-related accidents associated with hazardous materials spills, contamination, or fires. The following environmental commitments would be incorporated into this alternative (Appendix 3B, *Environmental Commitments*):

- A hazardous materials management plan (HMMP) that includes appropriate practices to reduce the likelihood of a spill of toxic chemicals and other hazardous materials during construction and facilities operation and maintenance.
- A spill prevention, containment, and countermeasure plan (SPCC Plan) will be developed and implemented to minimize effects from spills of oil or oil-containing products during construction and operation of the project.
- A fire prevention and control plan that will include fire prevention and suppression measures consistent with the policies and standards in the affected jurisdictions and will be in full compliance with Cal-OSHA standards for fire safety and prevention.

Incorporation of these environmental commitments would minimize the potential for construction-related accidents associated with hazardous materials spills, contamination, or fires, and reduce potential effects associated with increased service demands from new construction workers in the Plan Area.

In summary, the potential for Alternative 1A to result in an effect on law enforcement, fire protection, and emergency response services because of increased demand from new workers in the Plan Area during construction of the proposed water conveyance facilities is low. The minor increase in population associated with specialized construction jobs during the construction period would not likely result in an increased demand for law enforcement, fire protection, and medical services because the minor increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction. The incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires, and provide for onsite security at construction

sites, would minimize potential effects related to demand for public services associated with construction property protection and the potential for construction-related accidents. Environmental commitments would also be incorporated to reduce potential exposure of hazardous materials to the human and natural environment, thereby minimizing the potential related demand for fire or emergency services. This effect is not considered adverse.

Construction of Alternative 1A would not increase the demand on law enforcement, fire protection, and emergency response services either due to an increased worker population or due to construction-related hazards, such that it would result in substantial adverse physical effects associated with the provision of, or the need for, new or physically altered governmental facilities. Impacts to emergency response times from construction traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. Therefore, the effect would not be adverse.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by the existing five-county labor force, and the minor increase in population associated with specialized construction jobs (e.g., tunnel construction) during the construction period would not likely result in an increased demand for law enforcement, fire protection, and medical services. This is because the minor increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction. There would be a less than significant impact on law enforcement, fire protection, and emergency response services from the increased demand of new workers who relocate to communities in the Plan Area during construction of the proposed water conveyance facilities.

Incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires, and provide for onsite security at construction sites would minimize potential effects related to the potential for construction-related accidents, and increased demand for public services associated with construction property protection. Environmental commitments would also be incorporated to reduce potential exposure of hazardous materials to the human and natural environment, thereby minimizing the potential demand for fire or emergency services.

Construction of Alternative 1A would not require new or physically altered governmental facilities since it would not cause a marked increase in the worker population in the Plan Area, nor would it increase the potential for construction-related hazards. This impact would be less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Together, the Courtland FPD's Courtland and Hood fire stations serve a 33-mile square area within Sacramento County. Under Alternative 1A, construction of the proposed water conveyance pipeline between Intake 3 and the Intermediate Forebay would conflict with the Hood Fire Station, at 1125 Hood-Franklin Road in Hood. The Courtland Fire Station, at 154 Magnolia Avenue in Courtland, is approximately 5 miles southwest of the Hood Fire Station, along Highway 160. Figure 20-5 shows the footprint of the existing Hood Fire Station in relation to the construction footprint under Alternative 1A.

Implementation of Alternative 1A, depending on final design of the alignment, could require relocation of the Hood Fire Station. The economic impacts of this, such as loss of or relocation of public services jobs, are discussed in Impact ECON-3 in Chapter 16, *Socioeconomics.* Mitigation

Measure UT-2 would be available to lessen the severity of the potential effect to not adverse by ensuring continuation of fire protection services in the Courtland Fire Protection District service area, by the Courtland Fire Station which also serves the area. Implementation of Mitigation Measure UT-2 would also require the construction of a replacement facility, which could result in adverse environmental effects. Therefore, this effect would be adverse. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and effects would not be adverse.

***CEQA Conclusion*:** Depending on final design of the alignment, Alternative 1A could require relocation of Courtland FPD's Hood Fire Station. While implementation of Mitigation Measure UT-2 would lessen the severity of the impact by ensuring continuation of fire protection services in the Courtland FPD service area, construction of a replacement facility could cause significant environmental effects. Construction of a replacement fire station would require subsequent environmental review under CEQA. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and this impact could be less than significant.

Mitigation Measure UT-2: Ensure the Continuation of Fire Protection Services by the Courtland Fire Protection District

Prior to any construction that would disrupt services provided by Courtland FPD's Hood Fire Station, the BDCP proponents will ensure that fire protection services in the Hood Fire Station service area are maintained throughout construction of the proposed water conveyance facilities, in consultation with the Courtland FPD. If final design of the alternative requires demolition and relocation of the Hood Fire Station, the BDCP proponents, working closely with the Courtland FPD, will provide funding in sufficient amounts to construct or provide a suitable permanent fire protection facility prior to the start of any activities that would disrupt fire protection services. The new permanent facility shall, at a minimum, maintain the existing level of fire protection service in the Hood Fire Station service area (i.e., average response time of between 5–10 minutes [Appendix 20-A]). The construction of a new fire protection facility would be constructed in compliance with applicable local, state and federal laws and regulations associated with the siting, design, and construction of fire protection facilities, and would also require subsequent environmental review under CEQA.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of the proposed water conveyance facilities under Alternative 1A would require an estimated peak of 4,390 workers (Table 20-2), most of whom are expected to come from the existing five-county labor force. However, tunnel construction may require workers with specialized skills not readily available in the local labor pool. It is anticipated that some of the non-local workers would come from outside the five-county region, although this would represent a minor increase in population compared to the total 2020 projected regional population of 4.6 million.

Because most of the BDCP construction jobs would be filled by workers from within the existing five-county labor force, it is anticipated that school-aged children from those families would already have planned to attend schools in school districts within the Plan Area and there would be no increased demand for public school services from these workers (see Table 20A-4, Appendix 20A).

While some workers who relocate from outside of the Plan Area could have school-age children, resulting in an increase in public school enrollment, this minor increase in population in the Plan Area would not be expected to result in an increase in enrollment numbers substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. Further, it would be difficult to identify specifically where within the region these new employees would reside. However, Table 20A-4 in Appendix 20A lists the 209 schools that serve the communities within the Plan Area and the current enrollment numbers for each school, which identifies a total enrollment of 148,880 across the Plan Area. The incremental increase in school-age children of construction personnel moving into the area for specialized jobs (e.g., tunnel construction) as a result of construction of Alternative 1A would likely be distributed through a number of schools within the Plan Area. This increase would not be substantial enough to exceed the capacity of any identified school or district, or to warrant construction of a new facility.

Overall, construction of Alternative 1A is not anticipated to result in a substantial increase in demand for public schools in the Plan Area and would not create a need for new or physically altered public schools. There would be no adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the existing five-county labor force. The incremental increase in school-age children of construction personnel moving into the area for specialized construction jobs (e.g., tunnel construction) would likely be distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility or alteration of an existing facility within the Plan Area. The impact is less than significant. No mitigation is required[2].

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of the proposed water conveyance facilities would require water supply and wastewater treatment services. While general construction activities including dust control and soil compaction would require a supply of water, for purposes of this analysis, the major potable water supply needs would be for the concrete batch plants (see Chapter 3, *Description of Alternatives*) and field offices during construction. Potable water supply needed for construction was calculated based on the amount of concrete required for this alternative and the amount of water required by the field offices. Under this alternative, five concrete batch plants would be constructed onsite for temporary use during construction. Each batch concrete plant would require fresh water for batching, dust control, and washing requirements (including concrete truck washout). The potable water supply estimates also considered the number of field offices needed for each alternative and assumed that each field office would have an average of 10 workers, an average of 40 gallons of water would be consumed per person per day (including drinking, hand washing, and toilet use), and would be operational for 3,285 days (i.e., 9 years at 365 days per year[3]). Table

[2] Under California law, the rules governing what constitutes adequate mitigation for impacts on school facilities is governed by legislation. Pursuant to the operative statutes, impacts to schools, with some exceptions, are sufficiently mitigated, as a matter of law, by the payment of school impact fees by residential developers. (See Cal. Gov. Code, §§ 65995[h], 65996[a].)

[3] This is a conservative estimate, as Chapter 3, *Description of Alternatives*, indicates that most construction activities will occur only 5 days a week (Monday through Friday) up to 24 hours a day.

20-3 presents the estimated potable water supply required for concrete (by each type of facility) and for field offices.

Based on the number of major structures associated with Alternative 1A, it is estimated that 16 field offices would be needed, which would use 21 million gallons of water. In addition, 147 million gallons of water would be used for activities associated with concrete batch plants. The total potable water supply needed under this alternative is estimated to be 168 million gallons (Table 20-3). It is anticipated that if there are existing water lines in the vicinity of the construction sites, the field office will connect to them. Because construction of this alternative would primarily occur in rural parts of the Plan Area, and is not likely to occur in areas with municipal water service, it is not expected to impact municipal water systems. If there are no existing water lines in the vicinity, then field offices will require construction of a water tank. Water for construction will be provided by available sources to the extent possible; if needed, water may be brought to the construction sites in water trucks. Construction impacts associated with trucks, including water trucks, are addressed in Chapter 19, *Transportation*, Chapter 22, *Air Quality and Greenhouse Gases*, and Chapter 23, *Noise*. As such, this alternative would not likely adversely affect municipal water supplies. Additionally, the potable water demand would be temporary and limited to the construction period.

Tunnel boring would create a substantial amount of wastewater. This material, part of the reusable tunnel material (RTM), would also include soils, foaming agents, and other materials. This analysis assumes that RTM would undergo treatment in isolated RTM storage areas located throughout the Plan Area (see Figure M3-1 in the Mapbook Volume), and therefore, wastewater related to tunnel boring RTM would not require treatment at wastewater treatment facilities. As part of the alternative, DWR would implement an environmental commitment (as discussed in Appendix 3B, *Environmental Commitments*) that would dispose of and reuse spoils, reusable tunnel material, and dredged material. Concrete batch plants would also create wastewater, which would be treated onsite at designated concrete batch plant sites. Wastewater generated during construction at field offices and temporary construction facilities will be served by temporary portable facilities (e.g., portable toilets). As discussed in Chapter 8, *Water Quality*, as part of the Environmental Commitments (Appendix 3B) for each alternative, DWR will be required to conduct project construction activities in compliance with the State Water Board's *NPDES Stormwater General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order No. 2009-0009-DWQ/NPDES Permit No. CAS000002). This General Construction NPDES Permit requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) that outlines the temporary construction-related BMPs to prevent and minimize erosion, sedimentation, and discharge of other construction-related contaminants, as well as permanent post-construction BMPs to minimize adverse long-term stormwater related–runoff water quality effects.

Considered across the alternative, potable water supply needs are substantial in volume; however, these requirements would need to be met over a construction period of approximately 9 years, and would be anticipated to be met with non-municipal water sources without any need for new water supply entitlements. Further, wastewater treatment services required for this alternative would be provided by temporary facilities and treated onsite. Construction of Alternative 1A would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

Table 20-3. Estimated Potable Water Supply for Construction by Alternative

	Alternatives 1A, 2A, 6A		Alternatives 1B, 2B, 6B		Alternatives 1C, 2C, 6C		Alternative 3		Alternative 4		Alternative 5		Alternatives 7, 8		Alternative 9	
	CY Concrete	Gallons of water required	CY Concrete	Gallons of water required	CY Concrete	Gallons of water required	CY Concrete	Gallons of water required	CY Concrete	Gallons of water required	CY Concrete	Gallons of water required	CY Concrete	Gallons of water required	CY Concrete	Gallons of water required
Intakes	147,500	4,425,000	147,500	4,425,000	147,500	4,425,000	59,000	1,770,000	88,500	2,655,000	29,500	885,000	88,500	2,655,000	-	
Pumping Plants	442,035	13,261,050	442,035	13,261,050	442,035	13,261,050	176,814	5,304,420	265,221	7,956,630	88,407	2,652,210	265,221	7,956,630	-	
Pipelines	161,608	4,848,240	107,000	3,210,000	187,500	5,625,000	161,608	4,848,240	79,526	2,385,780	161,608	4,848,240	161,608	4,848,240	-	
Canals	-	-	282,422	8,472,660	251,915	7,557,450	-	-	52,711	1,581,330	-	-	-	-	-	
Siphons	-	-	644,846	19,345,380	768,538	23,056,140	-	-	229,233	6,876,990	-	-	-	-	-	
Control Structures	110,008	3,300,240	110,008	3,300,240	110,008	3,300,240	110,008	3,300,240	110,008	3,300,240	110,008	3,300,240	110,008	3,300,240	-	
Tunnels	3,741,459	112,243,770	477,120	14,313,600	1,681,659	50,449,770	3,425,200	102,756,000	4,046,481	121,394,430	1,119,249	33,577,470	3,741,459	112,243,770	-	
Bridges	-	-	51,291	1,538,730	54,341	1,630,230	-	-	-	-	-	-	-	-	-	
Forebays/Intermediate PP	301,096	9,032,880	195,373	5,861,190	169,043	5,071,290	301,096	9,032,880	39,857	1,195,710	301,096	9,032,880	301,096	9,032,880	-	
Subtotal for Concrete	4,903,706	147,111,180	2,457,595	73,727,850	3,812,539	114,376,170	4,233,726	127,011,780	4,911,537	147,346,110	1,809,868	54,296,040	4,667,892	140,036,760	1,400,502	42,015,060
Field offices [1]	-----	21,024,000	-----	18,396,000	-----	17,082,000	-----	17,082,000	-----	18,396,000	-----	15,768,000	-----	18,396,000	-----	13,140,000
Total Potable Water for Construction	**-----**	**168,135,180**	**-----**	**92,123,850**	**-----**	**131,458,170**	**-----**	**144,093,780**		**165,742,110**	**-----**	**70,064,040**	**-----**	**158,432,760**	**-----**	**55,155,060**

Notes:

[1] The number of field offices estimated for each alternative is based on the number of major structures included in the alternative. Major structures include: intakes, forebays, and pumping plants. Gallons of water required for each alternative is based on the following assumptions:

Average number of workers per office: 10

Number of operational days per office: 9 years at 365 days per year = 3,285

Gallons of water consumed per person per day: 40 (includes drinking, hand washing, and toilet use)

Based on these assumptions, the number of field offices required for each alternative is as follows:

Alternatives 1A, 2A, 6A: 16

Alternatives 1B, 2B, 6B, 1C, 2C, 6C: 14

Alternatives 4, 7, 8: 14

Alternative 3: 13

Alternative 5: 12

Alternative 9: 10

***CEQA Conclusion*:** While construction of Alternative 1A would require 61.7 million gallons of potable water, this supply could be met by non-municipal sources without any new water supply entitlements. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Water for construction activities would be brought to the site in water trucks. Wastewater services for construction crews would be provided by temporary portable facilities. Construction of Alternative 1A would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact is less than significant. No mitigation is required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Construction of the proposed water conveyance facilities would generate construction debris and excavated material that would require disposal at a landfill. For purposes of this analysis, an estimate of the total quantity of excavated material to be disposed at a landfill was calculated for each facility of the alternative based on construction cost estimating documents. Construction of the pipeline/tunnel alternatives, including Alternative 1A, is estimated to generate 17,846 tons of excavated material. Construction of tunnel segments under this alternative would require disposal of RTM, which is a mix of soils cutting and soil conditioning agents (water, air, bentonite, foaming agents, and/or polymers or biopolymers). As part of the alternative, DWR would implement an environmental commitment (as discussed in Appendix 3B, *Environmental Commitments*) that would dispose of and reuse spoils, reusable tunnel material, and dredged material. Before RTM can be reused or reintroduced to the environment, it must be managed and treated. Construction of the BDCP alternatives would utilize the controlled storage method; under this approach, RTM would be transported to designated RTM work areas for long-term disposal and storage. Based on a review of the typical additives in RTM, it is assumed that the RTM can be disposed of onsite; however, to be conservative, an estimated 0.1% of the excavated waste, accounting for any hazardous substances or wastes coming from farming operations or previous land uses, would require disposal at a landfill[4]. Based on these assumptions, up to 17.85 tons (i.e., 0.1% of 17,846 tons) of excavated materials would require disposal at a landfill. Under this alternative, the total volume of excavated material that would require disposal at a landfill during the construction period (17.85 tons) represents a negligible impact on the 11 solid waste landfills, which have a total remaining permitted capacity of over 300 million tons or 440.25 million cubic yards (Appendix 20A).

Construction debris, including debris from structure demolition, power poles, utility lines, piping, and other materials would also be generated as a result of construction of this alternative. For purposes of this analysis, the volume of construction debris generated during construction was based on estimated truck trips that were assumed to be potentially associated with disposal of construction debris at a landfill. This includes all trips by trucks categorized as Heavy Construction T7 that are likely to carry debris (flatbed, dump and tractor) detailed in Chapter 22, *Air Quality and Greenhouse Gases* (Table 22B-4 of Appendix 22B, *Air Quality Assumptions*). Under this alternative,

[4] The percentage of waste excavation that might need specialized disposal at a landfill site was determined in consultation with the U.S. Department of Energy (DOE) Hazardous Substances Coordinator. For purposes of this analysis, "excavated material" includes dredged spoils for intakes, associated pumping plants, canals, conveyance pipelines, and forebays. This analysis does not take into account RTM since 100% of RTM is assumed to be able to be disposed of on site.

there would be an average of 19 trips per day, or 41,908 trips over the 9-year construction period[5]. One truck typically holds approximately 20 cubic yards of material. Therefore, an average of 380 cubic yards (273 tons) of construction debris would be generated per day, totaling 838,152 cubic yards (603,469 tons[6]) of construction debris over the 9-year construction period.

Although it is not known specifically which landfills would be utilized during construction of the proposed water conveyance facilities, disposal of demolition and excavated material would be expected to occur at several different locations depending on the type of material and its origin. It is standard practice that the construction contractors handle and dispose of all hazardous and non-hazardous materials during construction. Of the solid waste facilities in the Plan Area counties, there are 30 active facilities that can handle solid waste, including 11 solid waste landfills with a remaining permitted capacity of well over 300 million tons, and 18 large volume transfer/processing facilities (see Appendix 20A, Table 20A-6 for a listing of each facility's name, location, permitted capacity, remaining capacity, maximum permitted daily throughput, and proximity to the statutory Delta). According to the California Department of Resources Recycling and Recovery (CalRecycle) Solid Waste Information System (SWIS), the 11 solid waste landfills within the study area have estimated "cease operation" dates[7] ranging from between 2016 and 2082. Of the remaining permitted capacity at area landfills, approximately 70% of the capacity is associated with landfills that are not expected to close for 18 to 70 more years (CalRecycle 2012).

Of the estimated 603,469 tons of construction debris that would be generated under this alternative, a percentage would be diverted from landfills to the maximum extent feasible at the time of demolition. Even before consideration of diversion, the construction debris represents negligible amount of the total remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity.

Based on a 2006 characterization study of construction and demolition waste conducted by the California Integrated Waste Management Board (CIWMB) (now CalRecycle), Alternative 1A would be considered reasonably equivalent to that study's "Other Construction and Demolition (C&D) activities that include construction or demolition materials generated from the building, repair, and/or demolition of roads, bridges and other public infrastructure." Divertible categories of material included recyclable aggregates; recyclable wood; rock, dirt, and sand; recyclable metal; and other recoverable material. All non-divertible materials are categorized as other municipal solid waste (MSW) (California Integrated Waste Management Board 2006:46).

Based on the CIWMB (now CalRecycle) study, approximately 93% of waste generated by the Other C&D subsector was estimated to be divertible. The 10 most prevalent materials for Other C&D waste are shown in Table 20-4. Nine of the top ten materials for Other C&D waste were considered

[5] As provided in Chapter 22, *Air Quality and Greenhouse Gases*, it is assumed that each truck will make a maximum of 4 roundtrips (or 8 one-way trips). Based on the assumptions detailed in Tables 22B-5 through 22B-8 of Appendix 22B, there would be 24 heavy duty dump trucks associated with construction of Alternatives 1A, 2A, and 6A (pipeline/tunnel alternatives), which would result in a maximum of 41,908 trips potentially associated with the disposal of construction debris at a landfill over the 9-year construction period. Although the truck trips during construction may not all be used for excavated material disposal, this number was used to provide a conservative estimate of the amount of excavated material that would be disposed.

[6] Conversion assumes 1 cubic yard of excavated material is approximately 0.72 ton.

[7] As defined by the California Department of Resources Recycling and Recovery (CalRecycle), for active disposal facilities, the ceased operations date is the estimated date when the facility will reach its permitted capacity. That date is found in or estimated from information in the current permit or permit application for a particular facility, including the approved closure plan for the facility (CalRecycle 2012).

divertible; only painted/demolition gypsum board was not. The most prominent single material type was large asphalt pavement without re-bar, which accounted for approximately 44% of total waste diverted, whereas all other material types in this waste subsector accounted for less than 10% of other C&D waste (California Integrated Waste Management Board 2006:31).

Table 20-4. Divertible Materials

Material	Divertible
Large Asphalt Pavement without re-bar	yes
Large Concrete without re-bar	yes
Dirt & Sand	yes
Small Asphalt Pavement without re-bar	yes
Small Asphalt Pavement with re-bar	yes
Small Concrete without re-bar	yes
Clean Dimensional Lumber	yes
Clean Engineered Wood	yes
Painted/Demolition Gypsum Board	no
Pallets & Crates	yes

Source: California Integrated Waste Management Board 2006:31.

Table 20-4 identifies some of the types of construction and demolition debris that would be anticipated to be generated as a result of construction of Alternative 1A. Demolished concrete could be sent to a concrete recycling facility. Other select materials, such as doors, windows, siding, lumber, timbers, and steel, may also be salvaged and reused. Based on CalRecycle's study, 561,226 tons (i.e., 93% of the 603,469 tons of construction debris) is estimated to be divertible. Diverting over 90% of this waste from landfills would substantially lessen any potential effects on Plan Area solid waste management providers. The materials requiring disposal that are considered non-divertible would be hauled offsite to a suitable landfill depending on the type of material and its origin.

While a 90% diversion rate is not always feasible in every instance, the State Agency Model Integrated Waste Management Act (IWMA) (Chapter 764, Statutes of 1999, Strom-Martin) which took effect on January 1, 2000 as part of AB 75, requires that each state agency (including DWR) is mandated to develop and implement an integrated waste management plan (IWMP). The provisions of the IWMA require that all state agencies and large state facilities must divert at least 50% of their solid waste from disposal facilities on and after January 1, 2004. Another requirement of the law is that each state agency and large facility is to submit an annual report to CalRecycle summarizing its yearly progress in implementing waste diversion programs. All solid waste management activities for the construction and operations and maintenance associated with Alternative 1A would be conducted in accordance with regulations set forth by CalRecycle, and any applicable IWMP developed for affected jurisdictions. Although it is not known which landfills will be utilized during construction of the proposed water conveyance facilities, as construction contractors will handle disposal of demolition and excavated material, it is assumed that at least 50% of waste (301,734 tons) will be diverted in compliance with the provisions of the IWMA. Therefore, after consideration of diversion requirements, the volume of construction debris that requires disposal at landfills (301,734 tons, at most) represents a negligible effect on the remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity.

Overall, the construction waste that could be generated by implementing Alternative 1A would not result in an adverse effect on the capacity of available landfills because 50% or more of construction waste generated by this alternative would be diverted (in accordance with diversion requirements set forth by the State Agency Model IWMA and BMP 13 [Appendix 3B, *Environmental Commitments*]), and the construction debris and excavated material that would require disposal at a landfill could be accommodated by, and would have a negligible effect on, the remaining permitted capacity of Plan Area landfills. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. This effect is not adverse.

***CEQA Conclusion*:** Based on the available capacity of landfills in the study area and the waste diversion requirements set forth by the State of California, it is expected that this alternative would not cause any exceedance of landfill capacity. RTM resulting from construction of tunnel segments would be treated in designated RTM work areas. Debris from structure demolition, power poles, utility lines, piping, and other materials would be diverted from landfills to the maximum extent feasible at the time of demolition. Plan Area landfills have the capacity to handle the remaining waste generated by construction activities. Further, this alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Construction of Alternative 1A would not generate solid waste that would exceed the permitted capacity of landfills to accommodate Alternative 1A's solid waste disposal needs, nor would it adversely impact the lifespan of the area landfills. This would be a less than significant impact. No mitigation is required.

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 1A, construction of some elements could disrupt utility services or require relocation of existing facilities. The alternative could result in environmental effects in and around areas temporarily or permanently affected by relocation activities.

Due to the nature of underground construction, the exact location of underground utilities cannot be guaranteed based on construction documents but can only be determined by careful probing or hand digging, in compliance with Article 6 of the California Occupational Safety and Health Administration (Cal/OSHA) Construction Safety Orders. Underground Service Alert, a service which provides utility location services, is not available until the time of construction. Construction activities for Alternative 1A could result in damage to or interference with existing water, sewer, storm drain, natural gas, oil, electric, and/or communication lines and, in some cases, could require that existing lines be permanently relocated, potentially causing interruptions in service. Numerous utility lines of varying sizes are located along and across the alternative alignment and at the various pumping plants and forebay sites.

This water conveyance alignment, along with its associated physical structures, could interfere with 9 overhead power/electrical transmission lines (Chapter 24, *Hazards and Hazardous Materials*, Figure 24-6), 5 natural gas pipelines (Table 20-5 and Chapter 24, *Hazards and Hazardous Materials*, Figure 24-3), 6 active oil or gas wells (Chapter 24, *Hazards and Hazardous Materials*, Figure 24-5), the Mokelumne Aqueduct, and approximately 38 miles of agricultural delivery canals and drainage

ditches, including approximately 7 miles on Victoria Island, 5 miles on Bacon Island, 4 miles on Byron Tract, and 4 miles on Tyler Island. The potential for construction of the proposed conveyance facilities to cause disruptions to agricultural infrastructure in the study area are addressed in Chapter 14, *Agricultural Resources*. Specifically, Chapter 14 addresses potential conflicts with existing agricultural irrigation and drainage facilities as a result of construction.

Table 20-5. Number and Type of Pipelines and Electrical Transmission Lines Crossing Action Alternative 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

Construction of the proposed conveyance facility would involve site grading and similar activities requiring heavy equipment use. These construction activities could result in the unintentional damage to or disruption of underground utilities as a result of trenching, augering, or other ground disturbing activity. Disruption of certain utilities, such as natural gas pipelines, could result in public health hazards (e.g., explosions). Construction could also result in damage to or disruption of overhead utilities when establishing electrical interconnection of this alternative to the electric grid. Temporary transmission lines would extend existing power infrastructure (transmission lines and substations) to construction areas. In some cases, disruption of infrastructure and facility operations would be avoided because BDCP facilities would cross either over or under the existing utilities. For instance, most natural gas pipeline crossings are less than 30 feet below ground surface and the proposed tunnel would be installed more than 80 feet below ground surface. However, construction of certain alternative facilities would require relocation of existing utilities.

Proposed forebays and spoil areas would conflict with PG&E 500 kV and 115 kV power lines, and with a Western 500 kV transmission line, which crosses the Byron Tract Forebay site and a RTM area. Some additional electric distribution lines along roads would require relocation. Six active oil or gas wells lie along the permanent conveyance footprint or within areas identified for the deposition of borrow, spoil, or RTM, where it crosses Brannan-Andrus and Tyler Islands. Since the RTM areas will not be deeper than topsoil levels, minimal conflicts, if any, are anticipated. One natural gas pipeline in the Byron Tract Forebay area would potentially require relocation.

The potential damage and disruption to buried and overhead electric transmission lines would be similar for telecommunication infrastructure. In addition, alternative construction would require use of existing and/or construction of new communications infrastructure for intake pumping plants (Chapter 3, *Description of Alternatives*). A communication system would be required to connect to the existing DWR Delta Field Division Operations and Maintenance Center near Banks Pumping Plant and the DWR communications headquarters in Sacramento, which would require buried fiber optic conduit installed from the southern end of the new conveyance facility at Byron Tract Forebay along the inlet canal to Banks pumping plant and the Delta Field Division Operations and Maintenance Center. The conduit route would be adjacent to roads, highways, railroads, utilities, or other easements.

Effects would be more likely to occur if utilities were not carefully surveyed prior to construction, including contact with local utility service providers. Implementation of pre-construction surveys, and then utility avoidance or relocation if necessary, would minimize any potential disruption. Mitigation Measures UT-6a, UT-6b, and UT-6c would require relocation or modification of existing utility systems, including, but not limited to, public and private ditches, pumps, and septic systems, in a manner that does not affect current operational reliability to existing and projected users; coordination of utility relocation and modification with utility providers and local agencies to integrate potential other construction projects and minimize disturbance to the communities; and verification of utility locations through field surveys and services such as Underground Service Alert.

Because relocation and disruption of existing utility infrastructure, including water, sewer, storm drain, natural gas, oil, electric, and/or communication lines, would be required under this alternative, this would be an adverse effect.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting public utility service by crossing over or under existing infrastructure. However, construction of facilities would conflict with utility facilities in some locations. Alternative 1A would require relocation of regional power transmission lines and one natural gas pipeline. Additionally, active gas wells may need to be plugged and abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant

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

Before beginning construction, the BDCP proponents will confirm utility/infrastructure locations through consultation with utility service providers, preconstruction field surveys, and services such as Underground Service Alert. The BDCP proponents will find the exact location of underground utilities by safe and acceptable means, including use of hand and modern techniques as well as customary types of equipment. Information regarding the size, color, and location of existing utilities must be confirmed before construction activities begin. The BDCP proponents will confirm the specific location of all high priority utilities (i.e., pipelines carrying petroleum products, oxygen, chlorine, toxic or flammable gases; natural gas in pipelines greater than 6 inches in diameter, or with normal operating measures, greater than 60 pounds per square inch gauge; and underground electric supply lines, conductors, or cables that have a potential to ground more than 300 volts that do not have effectively grounded sheaths) and such locations will be highlighted on all construction drawings.

The contract specifications will require that the contractor provide weekly updates on planned excavation for the upcoming week and identify when construction will occur near a high priority utility. On days when this work will occur, construction managers will attend tailgate meetings with contractor staff to review all measures—those identified in the Mitigation Monitoring and Reporting Program and in the construction specifications—regarding such excavations. The contractor's designated health and safety officer will specify a safe distance to work near high-pressure gas lines, and excavation closer to the pipeline will not be authorized until the designated health and safety officer confirms and documents in the construction records that: (1) the line was appropriately located in the field by the utility owner using as-built drawings and a pipeline-locating device, and (2) the location was verified by hand by the construction contractor. The designated health and safety officer will provide written confirmation to the BDCP proponents that the line has been adequately located, and excavation will not start until this confirmation has been received by the BDCP proponents.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

In places where utility lines would be relocated, existing corridors will be utilized to the greatest extent possible, in the following order of priority: (1) existing utility corridors; (2) highway and railroad corridors; (3) recreation trails, with limitations; and (4) new corridors.

New poles or towers will be erected and cable-pulled prior to being connected to existing systems. Natural gas pipeline relocation will be constructed by one of several methods including cut-and-cover, trenching, or placement on at-grade saddles. Active natural gas wells in the proposed water conveyance facilities area will be abandoned to a depth below the tunnel. However, out of 629 oil and natural gas wells in the five county area, only four to six wells may need to be moved or abandoned. The 629 wells amount to 1-6% of the county's production, so the potential loss of 4 to 6 wells would not significantly impact utilities.

Decisions regarding agricultural irrigation and drainage ditches will be made based on site-specific conditions. Planned measures may include one or more of the following.

- New or modified irrigation pumping plants.
- Extended delivery pipes.

- New or modified drainage ditches.
- New or modified drainage pumping plants.

Any utility relocation will be coordinated with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities. BDCP proponents will notify the public in advance of any relocation that is anticipated to disrupt utility service. The BDCP proponents will contact utility owners if construction causes any damage and promptly reconnect disconnected cables and lines with approval of the owners.

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

While any excavation is open, the BDCP proponents will protect, support, or remove underground utilities as necessary to safeguard employees. The BDCP proponents will notify local fire departments if a gas utility is damaged causing a leak or suspected leak, or if damage to a utility results in a threat to public safety.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects:

Public Services

Operation and maintenance activities would require minimal labor. For the purposes of this analysis, it was estimated that weekly operations and maintenance would require approximately 190 workers (Table 20-2), including maintenance crew, management, repair crew, pumping plant crew, and dewatering crew. These activities would take place along the entire alternative alignment. Given the limited number of workers involved and the large number of work sites, it is not anticipated that routine operations and maintenance activities or major inspections would result in substantial demand for law enforcement, fire protection, or emergency response services. In addition, operation and maintenance would not place service demand on public schools or libraries. The operation and maintenance of the proposed water conveyance facilities would not result in the need for new or physically altered government facilities as a result of increased need for public services.

Utilities

Water and Wastewater

Operation and maintenance of Alternative 1A facilities would involve use of water for pressure washing intake screen panels and basic cleaning of building facilities and other equipment. Additionally, pumping plants would include permanent restroom facilities, which would be equipped with a sanitary gravity drainage leading to a wastewater holding tank. A potable water system would provide water to pumping plant welfare facilities and, if required, safety showers. This supply would be taken from the nearest clean water conveyance system, if available. If not available, pumping plants would be designed to include a self-contained water filtration and treatment system. Raw water downstream would be evaluated for potential use in a non-potable system serving hose faucets and water-cooled condensing units for plant equipment. Quantities of

water needed for these purposes would be anticipated to be relatively small compared to municipal supplies. Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities. The operation and maintenance of the proposed water conveyance facilities would not result in the need for new water supply entitlements, or require construction of new water or wastewater treatment facilities or expansion of existing facilities.

Solid Waste

Operation and maintenance of the proposed water conveyance facilities under Alternative 1A would not be expected to generate solid waste such that there would be an increase in demand for solid waste management providers in the Plan Area or surrounding communities. However, operation and maintenance of the proposed water conveyance facilities would involve a sedimentation basin that would be constructed between the intake structure and the pumping plant to collect sediment load from the river. Although the intake fish screens would remove debris and sediment from the intake inflow, a sedimentation basin would be constructed to remove the suspended solids that pass through the screen.

The volume of solids generated on a daily basis would depend on the volume of water pumped through the intakes, as well as the sediment load of the river. 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 up to 253,000 dry pounds per day. The annual volume of solids is anticipated to be approximately 486,000 cubic feet (dry solids).

As designed, it is anticipated that a portion of the solids would be stored and reused at alternative facilities and some portion would be transported for offsite disposal. Solids from sediment load would not exceed the permitted capacity or adversely impact the lifespan of area landfills.

Electricity and Natural Gas

Operation and maintenance of proposed water conveyance facilities under this alternative would require new permanent transmission lines for intakes, pumping plants, operable barriers, boat locks, and gate control structures throughout the various proposed conveyance alignments and construction of project facilities. Electrical power to operate the new north Delta pumping plant facilities would be delivered through a single 230 kV transmission line. Possible alignments for the 230 kV transmission line are shown in Figure 3-25 and the alignment selected for analysis under Alternative 1A is shown in Figure M3-1 in the Mapbook Volume. Two utility grids could supply power to the BDCP conveyance facilities: PG&E (under the control of the California Independent System Operator) and the Western. The electrical power needed for the conveyance facilities would be procured in time to support construction and operation of the facilities.

Construction of permanent transmission lines would not require improvements to, or affect, the existing physical power transmission system. Operation and maintenance of the proposed water conveyance facilities would not result in the disruption or relocation of electric or natural gas utilities. Effects associated with energy demands of operation and maintenance of the proposed water conveyance facilities are addressed in Chapter 21, *Energy*.

Overall, operation and maintenance of the conveyance facilities under Alternative 1A would not result in adverse effects on public service demands, water supply and treatment capacity,

wastewater treatment facilities, solid waste facilities, or conflict with local and regional utility lines. There would not be an adverse effect.

***CEQA Conclusion*:** Operation and maintenance activities associated with the proposed water conveyance facilities would not result in the need for the provision of, or the need for, new or physically altered government facilities from an increased need for public services; construction of new water and wastewater treatment facilities or generate a need for new water supply entitlements; generate solid waste in excess of permitted landfill capacity; or result in the disruption or relocation of utilities. The impact on public services and utilities would be less than significant. No mitigation is required.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Alternative 1A would restore up to 83,900 acres under conservation measures to restore tidal habitat, seasonally inundated floodplain, grassland communities, vernal pool complex habitat, and nontidal marsh areas. Additionally, 20 linear miles of channel margin habitat would be enhanced. While locations of conservation measures have not been selected, implementation of conservation measures for habitat restoration and channel margin habitat enhancement would occur within the ROAs described in Chapter 3, *Description of Alternatives*.

Public Services

Potential effects of implementing conservation measures on law enforcement, fire protection, and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction-related accidents. Because of the scale and duration of construction associated with implementing conservation measures, there could be an increased demand for these public services. This effect would not be considered adverse with the implementation of environmental commitments to provide onsite private security services at construction areas and environmental commitments that would minimize the potential for construction-related accidents associated with hazardous materials spills, contamination, or fires, as described in Appendix 3B, *Environmental Commitments*. These environmental commitments would be incorporated into this alternative and would provide for onsite security at construction sites and minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the facilities associated with the conservation measures. Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation measures would not result in effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, emergency responders, hospitals, public schools, libraries).

Utilities

Water and Wastewater

Implementation of some of the conservation measures, in particular those involved with restoration and enhancement of some habitat types, could require a water supply, but would not require city or county treated water sources. Conservation measures that could increase need for water supply are restoration of tidal, seasonally inundated floodplain, channel margin, riparian, grassland, vernal pool complex, and nontidal marsh habitats; and maintenance of these habitats as well as alkali seasonal

wetland complex and managed wetlands habitats. Additionally, measures related to the reduction of stressors on covered species would not generally require a treated water supply or generate wastewater. Exceptions to this would potentially include the establishment of a new fish hatchery, expansion of facilities to support dissolved oxygen levels in the Stockton Deep Water Ship Channel, and activities to reduce the risk of invasive species introduction on recreational vessels. For example, boat cleaning stations proposed under the Recreational Users Invasive Species Program (CM20) would potentially draw substantial amounts of water from city or county treated water supplies. Because the location and construction or operation details (i.e., water consumption and water sources associated with various conservation measures) surrounding these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect is considered adverse.

Solid Waste

Implementation of some of the conservation measures would result in construction debris and green waste. Implementation of habitat restoration and enhancement proposed under CM4–CM11 would involve restoration, enhancement, and management of various types of habitat. Construction activities could require clearing and grubbing, demolition of existing structures (e.g., roads and utilities), surface water quality protection, dust control, establishment of storage and stockpile areas, temporary utilities and fuel storage, and erosion control. The estimated tonnage of construction debris and solid waste that would be generated from construction associated with the proposed conservation measures is unknown. However, there is a remaining landfill capacity of over 300 million tons in nearby landfills (Appendix 20A, Table 20A-6). The disposal of construction debris and excavated material would occur at several different locations depending on the type of material and its origin. Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that construction and operation of the proposed conservation measures would not cause any exceedance of landfill capacity.

Electricity and Natural Gas

Conservation measures including habitat restoration and enhancement would, in some cases, involve substantial earthwork and ground disturbance. As discussed above under Impact UT-6, construction could potentially disrupt utility services, and ground disturbance has potential to damage underground utilities. The long-term conversion of existing utility corridors to habitat could require relocation of utility infrastructure and potential disruption of service. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

Alternative 1A would restore, enhance, and protect thousands of acres of habitat, including the restoration of up to 65,000 acres of tidal habitat. The locations, construction, and operation details for these and other conservation measures have not been identified. Adverse effects due to the construction, operation, and maintenance activities associated with the conservation measures would not be expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand. However, there would be potential for the disruption or relocation of utilities. Further, no substantive adverse effects on solid waste management facilities would be anticipated. However, the location and construction or operation details (i.e., water consumption and water sources associated with conservation measures) surrounding these facilities and programs have not yet been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities is uncertain. This effect is considered adverse.

***CEQA Conclusion*:** Implementation of the proposed conservation measures would not likely require alteration of, or the construction of new government facilities due to an increased demand for public services and utilities. Several measures to reduce stressors on covered species could result in additional water supply requirements, but are not expected to require substantial increases in demand for city or county water and wastewater treatment services. Construction and operation activities associated with the proposed conservation measures would result in a less than significant impact on solid waste management facilities based on the capacity of the landfills in the region and the waste diversion requirements set forth by the State of California. However, the location and construction or operational details (i.e., water consumption and water sources associated with conservation measures) for these facilities and programs have not been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less than significant level. Therefore, this would be a significant and unavoidable impact.

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

Please see Mitigation Measure UT-6a under Impact UT-6, above.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6, above.

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, above.

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

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of the proposed water conveyance facilities under Alternative 1B could affect law enforcement, fire protection, and emergency services and facilities through increased demand for services and direct and indirect effects on nearby facilities, similar to those discussed under Alternative 1A but for a different conveyance structure alignment. Increased service demands would be experienced in the communities in which new construction workers relocate and in the areas in which construction would take place.

Increased Public Service Demands Associated with Workers Relocating to the Study Area

Although Alternative 1B would not result in a permanent increase in population that could tax the ability to provide adequate law enforcement, fire protection, and medical services, the increase in construction workers anticipated during the construction period of approximately 9 years could increase demands for these services during this period. An estimated peak of 6,280 workers would

be needed during construction of the proposed water conveyance facilities (Table 20-2) (Chapter 16, *Socioeconomics*). It is anticipated that many of these construction jobs would be filled from the existing labor force in the five-county Plan Area region. However, construction of a canal may require specialized skills resulting in recruitment of specially trained workers from outside the five-county region. As described in Chapter 16, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million. The numbers of workers estimated for Alternative 1B are higher than those for Alternative 1A, primarily because of the level of effort necessary for culvert installation. Because the construction population would primarily come from the existing five-county labor force which is already served by public service agencies and medical/emergency response services in the Plan Area (Appendix 20A, Tables 20A-1 to 20A-3), and because the minor increase in demand for these services from the population moving into the area to fill specialized jobs would be spread across the large multi-county study area, construction of the alternative is not anticipated to result in a substantial increase in demand for law enforcement, fire protection, or medical services.

Increased Public Service Demands Associated with Construction Work Areas and Activities

Constructing the proposed water conveyance facilities could create additional demand for law enforcement, fire protection, or emergency medical services for construction property protection and related to the potential for construction-related accidents associated with hazardous materials spills, contamination, or fires.

The scale and duration of construction required for Alternative 1B could result in increased demand on law enforcement services, especially near major construction sites. As part of the alternative, the DWR would implement an environmental commitment (as discussed in Appendix 3B, *Environmental Commitments*) that would ensure provision of 24-hour onsite private security at construction sites. Implementation of this environmental commitment would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection.

Construction of this alternative could also result in increased demands for service from law enforcement, fire protection, and emergency service agencies related to possible increases in construction-related accidents, either at job sites or along haul routes, or other incidents involving hazardous materials. DWR would incorporate the same environmental commitments identified for Alternative 1A into Alternative 1B, to minimize the potential for construction-related accidents associated with hazardous materials spills, contamination, or fires (Appendix 3B, *Environmental Commitments*).

Incorporation of these environmental commitments would minimize the potential for construction-related accidents associated with hazardous materials spills, contamination, or fires, and reduce potential effects associated with increased service demands from new construction workers in the Plan Area.

In summary, the potential for Alternative 1B to result in an effect on law enforcement, fire protection, and emergency response services because of increased demand from new workers in the Plan Area during construction of the proposed water conveyance facilities is low. The minor increase in population associated with construction of specialized jobs during the construction period would not likely result in an increased demand for law enforcement, fire protection, and medical services because the minor increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction. The incorporation of environmental commitments that would minimize construction-related accidents associated with

hazardous materials spills, contamination, and fires, and provide for onsite security at construction sites, would minimize potential effects related to demand for public services associated with construction property protection and the potential for construction-related accidents. Environmental commitments would also be incorporated to reduce potential exposure of hazardous materials to the human and natural environment, thereby minimizing the potential related demand for fire or emergency services. This effect is not considered adverse.

Construction of Alternative 1B would not increase the demand on law enforcement, fire protection, and emergency response services from new workers in the Plan Area such that it would result in substantial adverse physical effects associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental effects. Impacts to emergency response times from construction traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. Therefore, the effect would not be adverse.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by the five-county labor force, and the minor increase in population associated with construction of specialized jobs (e.g., construction of tunnels) is not likely to result in a substantial increase in demand for law enforcement, fire protection and medical services because the minor increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction. There would be a less than significant impact on law enforcement, fire protection, and emergency response services from the increased demand of new workers who relocate to communities in the Plan Area during construction of the proposed water conveyance facilities.

In addition, incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires, and provide for onsite security at construction sites, would minimize potential effects related to the potential for construction-related accidents, and increased demand for public services associated with construction property protection. Environmental commitments would also be incorporated to reduce potential exposure of hazardous materials to the human and natural environment, thereby minimizing the potential demand for fire or emergency services. Construction of Alternative 1B would not require new or physically altered governmental facilities, the construction of which could cause significant environmental effects, to support the needs of new workers in the Plan Area. These impacts would be less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Together, the Courtland FPD's Courtland and Hood fire stations serve a 33-mile square area within Sacramento County. Under Alternative 1B, construction of a canal segment and bridge would conflict with the Courtland FPD's Hood Fire Station (Figure 20-6). The Courtland Fire Station, at 154 Magnolia Avenue in Courtland, is approximately 5 miles southwest of the Hood Fire Station, along Highway 160.

Implementation of Alternative 1B, depending on final design of the alignment, could require relocation of Hood Fire Station and result in environmental effects associated with construction of a replacement facility. Mitigation Measure UT-2 would be available to lessen the severity of the potential effect to not adverse by ensuring continuation of fire protection services in the Courtland Fire Protection District service area by the Courtland Fire Station, which also serves the area. Implementation of Mitigation Measure UT-2 would also require the construction of a replacement

facility, which could result in adverse environmental effects. Therefore, this effect would be adverse. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and effects would not be adverse.

***CEQA Conclusion*:** Depending on final design of the alignment, Alternative 1B could require relocation of Courtland FPD's Hood Fire Station. While implementation of Mitigation Measure UT-2 would lessen the severity of the impact by ensuring continuation of fire protection services in the Courtland FPD service area, construction of a replacement facility could cause significant environmental effects. Construction of a replacement fire station would require subsequent environmental review under CEQA. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and this impact could be less than significant.

Mitigation Measure UT-2: Ensure the Continuation of Fire Protection Services by the Courtland Fire Protection District

Please see Mitigation Measure UT-2 under Impact UT-2 in the discussion of Alternative 1A.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of the proposed water conveyance facilities under this alternative would require an estimated peak of 6,280 workers (Table 20-2), most of whom are expected to come from the existing five-county labor force. However, construction of the canal may require workers with specialized skills not readily available in the local labor pool. It is anticipated that some of the non-local workers would come from outside the five-county region, although this would represent a minor increase in population compared to the total 2020 projected regional population of 4.6 million.

Because most of the BDCP construction jobs would be filled by workers from within the existing five-county labor force, it is anticipated that school-aged children from those families would already have planned to attend schools in school districts within the Plan Area and there would be no increased demand for public school services from these workers (see Table 20A-4, Appendix 20A). While some workers who relocate from outside of the Plan Area could have school-age children resulting in an increase in public school enrollment, this minor increase in population in the Plan Area would not be expected to result in an increase in enrollment numbers substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. Further, it would be difficult to identify specifically where within the region these new employees would reside. However, Table 20A-4 in Appendix 20A lists the 209 schools that serve the communities within the Plan Area and the current enrollment numbers for each school, which identifies a total enrollment of 148,880 across the Plan Area. The incremental increase in school-age children of construction personnel moving into the area for specialized jobs as a result of construction of Alternative 1B would likely be distributed through a number of schools within the Plan Area. This increase would not be substantial enough to exceed the capacity of any identified school or district, or to warrant construction of a new facility.

Overall, construction of Alternative 1B is not anticipated to result in a substantial increase in demand for public schools in the Plan Area. There would be no adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the existing five-county labor force. Incremental increase in school-age children of construction personnel moving into the area for specialized construction jobs would likely be distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility or alteration of an existing facility within the Plan Area. The impact is less than significant. No mitigation is required.

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of the proposed water conveyance facilities would require water supply and wastewater treatment services. While general construction activities including dust control and soil compaction would require a supply of water, for purposes of this analysis, the major potable water supply needs will be for the concrete batch plants (see Chapter 3, *Description of Alternatives*) and field offices during construction. Potable water supply needed for construction was calculated based on the amount of concrete required for this alternative and the amount of water required by the field offices. Under this alternative, four concrete batch plants would be constructed onsite for temporary use during construction. Each batch concrete plant would require fresh water for batching, dust control, and washing requirements (including concrete truck washout). The potable water supply estimates also considered the number of field offices needed for each alternative and assumed that each field office would have an average of 10 workers, an average of 40 gallons of water would be consumed per person per day (including drinking, hand washing, and toilet use), and would be operational for 3,285 days (i.e., 9 years at 365 days per year). Table 20-3 presents the estimated potable water supply required for concrete (by each type of facility) and for field offices.

Based on the number of major structures associated with Alternative 1B, it is estimated that 14 field offices would be needed, which would use 18 million gallons of water. In addition, 73 million gallons of water would be used for activities associated with concrete batch plants. The total potable water supply needed under this alternative is estimated to be 92.1 million gallons (Table 20-3). It is anticipated that if there are existing water lines in the vicinity of the construction sites, the field office will connect to them. Because construction of this alternative would primarily occur in rural parts of the Plan Area, and is not likely to occur in areas with municipal water service, it is not expected to impact municipal water systems. If there are no existing water lines in the vicinity, then field offices will require construction of a water tank. Water for construction will be provided by available sources to the extent possible; if needed, water may be brought to the construction sites in water trucks. Construction impacts associated with trucks, including water trucks, are addressed in Chapter 19, *Transportation*, Chapter 22, *Air Quality and Greenhouse Gases*, and Chapter 23, *Noise*. As such, this alternative would not likely adversely affect municipal water supplies. As such, this alternative would not likely adversely affect municipal water supplies. Additionally, the potable water demand would be temporary and limited to the construction period.

Tunnel boring would create a substantial amount of wastewater. This material, part of the RTM, would also include soils, foaming agents, and other materials. This analysis assumes that RTM would undergo treatment in isolated RTM storage areas located throughout the Plan Area (see Figure M3-2 in the Mapbook Volume), and therefore, wastewater related to tunnel boring RTM would not require treatment at wastewater treatment facilities. As part of the alternative, DWR would implement an environmental commitment (as discussed in Appendix 3B, *Environmental Commitments*) that would dispose of and reuse spoils, reusable tunnel material, and dredged material. Concrete batch plants

would also create wastewater, which would be treated onsite at designated concrete batch plant sites. Wastewater generated during construction at field offices and temporary construction facilities will be served by temporary portable facilities (e.g., portable toilets). As discussed in Chapter 8, *Water Quality*, as part of the Environmental Commitments (Appendix 3B) for each alternative, DWR will be required to conduct project construction activities in compliance with the State Water Board's *NPDES Stormwater General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order No. 2009-0009-DWQ/NPDES Permit No. CAS000002). This General Construction NPDES Permit requires the development and implementation of a SWPPP that outlines the temporary construction-related BMPs to prevent and minimize erosion, sedimentation, and discharge of other construction-related contaminants, as well as permanent post-construction BMPs to minimize adverse long-term stormwater related–runoff water quality effects.

Considered across the alternative, potable water supply needs are substantial in volume; however, these requirements would be met over duration of the construction period of approximately 9 years, and would be anticipated to be met with non-municipal water sources without any new water supply entitlements. Further, wastewater treatment services required for this alternative would be provided by temporary facilities and treated onsite. Construction of Alternative 1B would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

***CEQA Conclusion*:** While construction of Alternative 1B would require 87.6 million gallons of potable water, this supply could be met by non-municipal sources without any new water supply entitlements. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Water for construction activities would be brought to the site in water trucks. Wastewater services for construction crews would be provided by temporary portable facilities. Construction of Alternative 1B would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact is less than significant. No mitigation is required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Construction of the proposed water conveyance facilities would generate construction debris and excavated material that would require disposal at a landfill. For purposes of this analysis, an estimate of the total quantity of excavated material to be disposed at a landfill was calculated for each facility of the alternative based on construction cost estimating documents. Construction of the East Alignment alternatives, including Alternative 1B, is estimated to generate 58,253 tons of excavated material. Construction of tunnel siphons under this alternative would require disposal of RTM, which is a mix of soils cutting and soil conditioning agents (water, air, bentonite, foaming agents, and/or polymers or biopolymers). As part of the alternative, DWR would implement an environmental commitment (as discussed in Appendix 3B, *Environmental Commitments*) that would dispose of and reuse spoils, reusable tunnel material, and dredged material. Before RTM can be reused or reintroduced to the environment, it must be managed and treated. Construction of the BDCP alternatives would utilize the controlled storage method; under this approach, RTM would be transported to designated RTM work areas for long-term disposal and storage. Based on a review of the typical additives in RTM, it is assumed that the RTM can be disposed of onsite; however, to be conservative, an estimated 0.1% of the excavated waste, accounting for any hazardous substances or

wastes coming from farming operations or previous land uses, would require disposal at a landfill[8]. Based on these assumptions, up to 58.25 tons (i.e., 0.1% of 58,253 tons) of excavated materials would require disposal at a landfill. Under this alternative, the total volume of excavated material that would require disposal at a landfill during the construction period (58.25 tons) represents a negligible impact on the 11 solid waste landfills, which have a total remaining permitted capacity of over 300 million tons (Appendix 20A).

Construction debris, including debris from structure demolition, power poles, utility lines, piping, and other materials would also be generated as a result of construction of this alternative. For purposes of this analysis, the volume of construction debris generated during construction was based on estimated truck trips that were assumed to be potentially associated with disposal of construction debris at a landfill. This includes all trips by trucks categorized as Heavy Construction T7 that are likely to carry debris (flatbed, dump, and tractor) detailed in Chapter 22, *Air Quality and Greenhouse Gases* (Table 22B-5 of Appendix 22B, *Air Quality Assumptions*). Under this alternative, there would be approximately 12 outbound trips per day[9]. One truck typically holds approximately 20 cubic yards of material. Therefore, an average of 240 cubic yards (173 tons[10]) of construction debris would be generated per day, totaling 522,846 cubic yards (376,449 tons) of construction debris over the 9-year construction period.

Although it is not known specifically which landfills would be utilized during construction of the proposed water conveyance facilities, disposal of demolition and excavated material would be expected to occur at several different locations depending on the type of material and its origin. It is standard practice that the construction contractors handle and dispose of all hazardous and non-hazardous materials during construction. Of the solid waste facilities in the Plan Area counties, there are 30 active facilities that can handle solid waste, including 11 solid waste landfills with a remaining permitted capacity of well over 300 million tons, and 18 large volume transfer/processing facilities (see Appendix 20A, Table 20A-6 for a listing of each facility's name, location, permitted capacity, remaining capacity, maximum permitted daily throughput, and proximity to the statutory Delta). According to the CalRecycle SWIS, the 11 solid waste landfills within the study area have estimated "cease operation" dates[11] ranging from between 2016 and 2082. Of the remaining permitted capacity at area landfills, approximately 70% of the capacity is associated with landfills that are not expected to close for 18 to 70 more years (CalRecycle 2012).

Of the estimated 376,449 tons of construction debris that would be generated under this alternative, a percentage would be diverted from landfills to the maximum extent feasible at the time of

[8] The percentage of waste excavation that might need specialized disposal at a landfill site was determined in consultation with the U.S. Department of Energy (DOE) Hazardous Substances Coordinator.

[9] As provided in Chapter 22, *Air Quality and Greenhouse Gases*, it is assumed that each truck will make a maximum of 4 roundtrips (or 8 one-way trips). Based on the assumptions detailed in Tables 22B-5 through 22B-8 of Appendix 22B, there would be 12 heavy duty dump trucks associated with construction of Alternatives 1B, 2B, and 6B (east alignment alternatives), which would result in a maximum of 26,142 trips potentially associated with the disposal of construction debris at a landfill over the 9-year construction period. Although the truck trips during construction may not all be used for excavated material disposal, this number was used to provide a conservative estimate of the amount of excavated material that would be disposed.

[10] Conversion assumes 1 cubic yard of excavated material is approximately 0.72 ton.

[11] As defined by the California Department of Resources Recycling and Recovery (CalRecycle), for active disposal facilities, the ceased operations date is the estimated date when the facility will reach its permitted capacity. That date is found in or estimated from information in the current permit or permit application for a particular facility, including the approved closure plan for the facility (CalRecycle 2012).

demolition. Even before consideration of diversion, the construction debris represents a negligible amount of the total remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity.

Based on a 2006 characterization study of construction and demolition waste conducted by the CalRecycle, Alternative 1B would be considered reasonably equivalent to that study's "Other C&D activities that include construction or demolition materials generated from the building, repair, and/or demolition of roads, bridges and other public infrastructure." Divertible categories of material included recyclable aggregates; recyclable wood; rock, dirt, and sand; recyclable metal; and other recoverable material. All non-divertible materials are categorized as other MSW (California Integrated Waste Management Board 2006:46).

Based on the CIWMB (now CalRecycle) study, approximately 93% of waste generated by the Other C&D subsector was estimated to be divertible. The 10 most prevalent materials for Other C&D waste are shown in Table 20-4. Nine of the top ten materials for Other C&D waste were considered divertible; only painted/demolition gypsum board was not. The most prominent single material type was large asphalt pavement without re-bar, which accounted for approximately 44% of total waste diverted, whereas all other material types in this waste subsector accounted for less than 10% of other C&D waste (California Integrated Waste Management Board 2006:31).

Table 20-4 identifies some of the types of construction and demolition debris that would be anticipated to be generated as a result of construction of Alternative 1B. Demolished concrete could be sent to a concrete recycling facility. Other select materials, such as doors, windows, siding, lumber, timbers, and steel, may also be salvaged and reused. Based on CalRecycle's study, 350,097 tons (i.e., 93% of the 376,449 tons of construction debris) is estimated to be divertible. Diverting over 90% of this waste from landfills would substantially lessen any potential effects to Plan Area solid waste management providers. The materials requiring disposal that are considered non-divertible would be hauled offsite to a suitable landfill depending on the type of material and its origin.

While a 90% diversion rate is not always feasible in every instance, the State Agency Model IWMA (Chapter 764, Statutes of 1999, Strom-Martin) which took effect on January 1, 2000 as part of AB 75, requires that each state agency (including DWR) is mandated to develop and implement an IWMP. The provisions of the IWMA require all state agencies and large state facilities to divert at least 50% of their solid waste from disposal facilities on and after January 1, 2004. Another requirement of the law is that each state agency and large facility is to submit an annual report to CalRecycle summarizing its yearly progress in implementing waste diversion programs. All solid waste management activities for the construction and operations and maintenance associated with Alternative 1B would be conducted in accordance with regulations set forth by CalRecycle, and any applicable IWMP developed for affected jurisdictions. Although it is not known which landfills will be utilized during construction of the proposed water conveyance facilities, as construction contractors will handle disposal of demolition and excavated material, it is assumed that at least 50% of waste (188,225 tons) will be diverted in compliance with the provisions of the IWMA. Therefore, after consideration of diversion requirements, the volume of construction debris that requires disposal at landfills (188,225 tons, at most) represents a negligible effect on the remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity.

Overall, the construction waste that could be generated by implementing Alternative 1A would not result in an adverse effect on the capacity of available landfills because 50% or more of construction

waste generated by this alternative would be diverted (in accordance with diversion requirements set forth by the State Agency Model IWMA and BMP 13 [Appendix 3B, *Environmental Commitments*]), and the construction debris and excavated material that would require disposal at a landfill could be accommodated by and have a negligible effect on the remaining permitted capacity of Plan Area landfills. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. This effect is not adverse.

***CEQA Conclusion*:** Based on the available capacity of landfills in the study area, and the waste diversion requirements set forth by the State of California, it is expected that this alternative would not cause any exceedance of landfill capacity. RTM resulting from construction of tunnel segments would be treated in designated RTM work areas. Debris from structure demolition, power poles, utility lines, piping, and other materials would be diverted from landfills to the maximum extent feasible at the time of demolition. Plan Area landfills have the capacity to handle the remaining waste generated by construction activities. Further, this alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Construction of Alternative 1B would not generate solid waste that would exceed the permitted capacity of landfills to accommodate Alternative 1B's solid waste disposal needs, nor would it adversely impact the lifespan of the area landfills. This would be a less than significant impact. No mitigation is required.

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 1B, construction of some elements could disrupt utility services or require relocation of existing facilities. The alternative could result in environmental effects in and around areas temporarily or permanently affected by relocation activities.

Due to the nature of underground construction, the exact location of underground utilities cannot be guaranteed based on construction documents; the location can only be determined by careful probing or hand digging, in compliance with Article 6 of the Cal/OSHA Construction Safety Orders. Underground Service Alert, a service which provides utility location services, is not available until the time of construction. Construction activities for Alternative 1B could result in damage to or interference with existing water, sewer, storm drain, natural gas, oil, electric, and/or communication lines and, in some cases, could require that existing lines be permanently relocated, potentially causing interruption in service. Numerous utility lines of varying sizes are located along and across alternative alignments; and at the various pumping plants and forebay sites.

Construction of some project elements under Alternative 1B would require relocation of existing utility facilities. This water conveyance alignment, along with its associated physical structures, would cross 9 overhead power/electrical transmission lines (Chapter 24, *Hazards and Hazardous Materials*, Figure 24-6), 3 natural gas pipelines (Table 20-5 and Chapter 24, *Hazards and Hazardous Materials*, Figure 24-3), and 4 active oil/natural gas wells (Chapter 24, *Hazards and Hazardous Materials*, Figure 24-5), the Mokelumne Aqueduct, a water supply pipeline in the city of Stockton, and approximately 136 miles of agricultural delivery canals and drainage ditches, including approximately 32 miles on Roberts Island, 28 miles on Union Island, 13 miles on New Hope Tract, 11

miles on Terminous Tract, and 10 miles on Rindge Tract. The potential for construction of the proposed conveyance facilities to cause disruptions to agricultural infrastructure in the study area are addressed in Chapter 14, *Agricultural Resources*. Specifically, Chapter 14 addresses potential conflicts with existing agricultural irrigation and drainage facilities as a result of construction. Additionally, local electrical distribution lines and communication lines occur along the conveyance alignment and could be disrupted or relocated to allow for the construction of BDCP facilities. As under Alternative 1A, in some cases, disruption of infrastructure and facility operation would be avoided because BDCP facilities would cross either over or under the existing utilities. However, in some cases, construction of BDCP facilities could require utilities to be relocated. Relocation of local electrical facilities may also be necessary.

Construction of the proposed conveyance facility would involve site grading and similar activities requiring heavy equipment use. These construction activities could result in the unintentional damage to or disruption of underground utilities as a result of trenching, augering, or other ground disturbing activity. Disruption of certain utilities, such as natural gas pipelines, could result in public health hazards (e.g., explosions). Construction could also result in damage to or disruption of overhead utilities when establishing electrical interconnection of this project to the electric grid. Temporary transmission lines would extend existing power infrastructure (transmission lines and substations) to construction areas. In some cases, the operation of these facilities would not be disrupted because facilities would cross over or under the existing utilities. For instance, most natural gas pipeline crossings are near the surface (less than 30 feet below ground surface) and the proposed tunnel would be placed more than 80 feet below ground surface. However, construction of certain facilities would require relocation of utilities.

The alignment of the canal and other conveyance facilities constructed under this alternative would cross power transmission lines owned by Pacific Gas & Electric, Western, and SMUD. The alignment also parallels a Western 230 kV transmission line corridor for approximately 10 miles, crossing it twice. Electrical distribution lines along many roads would require some relocation. Oil and gas pipelines could also require relocation. Abandoned gas wells within the construction right-of-way would be excavated and capped to a depth of 10 feet below the bottom of the canal or, in temporary construction areas, to a depth appropriate to site conditions. Out of 629 oil and natural gas wells in the five county area, only four to six wells may need to be moved or abandoned. The 629 wells amount to 1-6% of the county's production, so the potential loss of 4 to 6 wells would not significantly impact utilities. The canal would cross under the Mokelumne Aqueduct as part of the BNSF Railroad siphon and the three pipelines would require relocation for this crossing. Alterations to the Stockton water supply pipeline would also be necessary as a part of canal construction to allow the pipeline to cross under the canal. The potential damage and disruption to buried and overhead electrical transmission lines would be similar for telecommunications.

Effects would be more likely to occur if utilities were not carefully surveyed prior to construction, including contact with local utility service providers. Implementation of pre-construction surveys, and then utility avoidance or relocation if necessary, would minimize any potential disruption. Mitigation Measures UT-6a, UT-6b, and UT-6c would require that relocation or modification of existing utility systems, including, but not limited to, public and private ditches, pumps, and septic systems, in a manner that does not affect current operational reliability to existing and projected users; coordination of utility relocation and modification with utility providers and local agencies to integrate potential other construction projects and minimize disturbance to the communities; and verification of utility locations through field surveys and services such as Underground Service Alert.

Because relocation and disruption of existing utility infrastructure, including water, sewer, storm drain, natural gas, oil, electric, and/or communication lines, would be required under this alternative, this would be an adverse effect.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting public utility service by crossing over or under existing infrastructure. However, construction of facilities would conflict with utility facilities in some locations. Alternative 1B would require relocation of regional power transmission lines and one natural gas pipeline. Additionally, active gas wells may need to be plugged and abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Generally, this effect under Alternative 1B would be similar to that described under Alternative 1A.

Public Services

Operation and maintenance activities would require minimal labor. For the purposes of this analysis, it was estimated that weekly operations and maintenance would require approximately 200 workers (Table 20-2) (including maintenance crew, management, repair crew, pumping plant crew, and dewatering crew). These activities would take place along the entire alternative alignment. Given the limited number of workers involved and the large number of work sites, it is not anticipated that routine operations and maintenance activities or major inspections would result in substantial demand for law enforcement, fire protection, or emergency response services. In addition, operation and maintenance would not place service demand on public schools or

libraries. The operation and maintenance of the proposed water conveyance facilities would not result in the need for new or physically altered government facilities as a result of increased need for public services.

Utilities

Water and Wastewater

Operation and maintenance of the Alternative 1B facilities would involve use of water for pressure washing intake screen panels and basic cleaning of building facilities and other equipment. Additionally, pumping plants would include permanent restroom facilities, which would be equipped with a sanitary gravity drainage leading to a wastewater holding tank. A potable water system would provide water to pumping plant welfare facilities and, if required, safety showers. This supply would be taken from the nearest clean water conveyance system if available. If not available, plants would include a self-contained water filtration and treatment system. Raw water downstream would be evaluated for potential use in a non-potable system serving hose faucets and water-cooled condensing units for plant equipment. Quantities of water needed for these purposes would be anticipated to be relatively small compared with municipal supplies. Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities. The operation and maintenance of the proposed water conveyance facilities would not result in the need for new water supply entitlements, or require construction of new water or wastewater treatment facilities or expansion of existing facilities.

Solid Waste

Operation and maintenance activities associated with the Alternative 1B water conveyance facilities would not be expected to generate solid waste such that there would be an increase in demand for solid waste management providers in the Plan Area and surrounding communities. However, operation and maintenance of the proposed water conveyance facilities includes a sedimentation basin that would be constructed between the intake structure and the pumping plant (detailed in Chapter 3, *Description of Alternatives*) to collect sediment load from the river. Although the intake fish screens would remove debris and sediment from the intake inflow, a sedimentation basin would be constructed to remove the suspended solids that pass through the screen. Additionally, solids lagoons would be concrete lined to prevent seepage to the groundwater or adjacent riverbed.

The volume of solids generated on a daily basis would depend on the volume of water pumped through the intakes, as well as the sediment load within the river. Based on a worst-case scenario by considering the throughput of the intakes at a maximum flow of 3,000 cfs, approximately 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 as much as 253,000 dry pounds per day. The annual volume of solids is anticipated to be 486,000 cubic feet (dry solids).

As designed, the study area is expected to have capacity to store sediment accumulated over a 50-year period. Solids from sediment load would not exceed the permitted capacity or adversely impact the lifespan of area landfills.

Electricity and Natural Gas

Operation and maintenance of proposed water conveyance facilities under this alternative would require new permanent transmission lines for intakes, pumping plants, operable barriers, boat locks, and gate control structures throughout the various proposed conveyance alignments and construction of project facilities. Electrical power to operate the new north Delta pumping plant facilities would be delivered through a single 230 kV transmission line. Possible alignments for the 230 kV transmission line are shown in Figure 3-25 and the alignment selected for analysis under Alternative 1B is shown in Figure M3-2 in the Mapbook Volume. Two utility grids could supply power to the BDCP conveyance facilities: PG&E (under the control of the California Independent System Operator) and the Western. The electrical power needed for the conveyance facilities would be procured in time to support construction and operation of the facilities.

Construction of permanent transmission lines would not require improvements to, or affect, the existing physical power transmission system. Operation and maintenance of the proposed water conveyance facilities would not result in the disruption or relocation of electric or natural gas utilities. Effects associated with energy demands of operation and maintenance of the proposed water conveyance facilities are addressed in Chapter 21, *Energy*.

Overall, operation and maintenance of the conveyance facilities under Alternative 1B would not result in adverse effects on public service demands, water supply and treatment capacity, wastewater treatment facilities, solid waste facilities, or conflict with local and regional utility lines. There would not be an adverse effect.

***CEQA Conclusion*:** Operation and maintenance activities associated with the proposed water conveyance facilities would not result in the need for the provision of, or the need for, new or physically altered government facilities from an increased need for public services; construction of new water and wastewater treatment facilities or generate a need for new water supply entitlements; generate solid waste in excess of permitted landfill capacity; or result in the disruption or relocation of utilities. The impact on public services and utilities would be less than significant. No mitigation is required.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Generally, this effect under Alternative 1B would be similar to that under Alternative 1A.

Similar to Alternative 1A, conservation components under Alternative 1B would restore up to 83,900 acres of tidal habitat, seasonally inundated floodplain, grassland communities, vernal pool complex habitat, and nontidal marsh areas. Additionally, 20 linear miles of channel margin habitat would be enhanced. While locations of conservation components have not been selected, implementation of conservation components for habitat restoration and channel margin habitat enhancement would occur within the ROAs described in Chapter 3, *Description of Alternatives*.

Public Services

Potential effects of implementing conservation components on law enforcement, fire protection, and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction-related accidents. Because of the scale and duration of construction associated with implementing conservation components, there could be an increased

demand for public services. This effect would not be considered adverse with the implementation of environmental commitments described in Appendix 3B, *Environmental Commitments*. These environmental commitments would be incorporated into this alternative and would provide for onsite security at construction sites and minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation measures. Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation measures would not result in potential effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, public schools).

Utilities

Water and Wastewater

Implementation of some of the conservation measures, in particular those involved with restoration and enhancement of some habitat types, could require a water supply, but would not require municipal water sources. Conservation measures that could increase need for water supply are restoration of tidal, seasonally inundated floodplain, channel margin, riparian, grassland, vernal pool complex, and nontidal marsh habitats; and maintenance of these habitats as well as alkali seasonal wetland complex, and managed wetlands habitats. Additionally, measures related to the reduction of stressors on covered species would not generally require a municipal water supply or create wastewater. Exceptions to this would potentially include the establishment of a new fish hatchery, expansion of facilities to support dissolved oxygen levels in the Stockton Deep Water Ship Channel, and activities targeted toward reducing the risk of invasive species introduction on recreational vessels. For example, boat cleaning stations proposed under the Recreational Users Invasive Species Program (CM20) would potentially draw substantial amounts of water from municipal supplies. However, because the location and construction or operational details (i.e., water consumption and water sources associated with conservation measures) surrounding these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect would be considered adverse.

Solid Waste

Implementation of some of the conservation measures would result in construction debris and green waste. Specifically, implementation of habitat restoration and enhancement proposed under CM4–CM11 would involve restoration, enhancement, and management of various types of habitat. Construction activities could require clearing and grubbing, demolition of existing structures (e.g., roads and utilities), surface water quality protection, dust control, establishment of storage areas and stockpile areas, temporary utilities and fuel storage, and erosion control. The estimated tonnage of construction debris and solid waste that would be generated from construction activities associated with the proposed conservation measures is unknown at this time. However, there is a remaining capacity of well over 300 million tons in nearby landfills (see Table 20A-6 in Appendix 20A for a listing of each facility's name, location, permitted capacity, remaining capacity, maximum permitted daily throughput, and proximity to the statutory Delta boundary). According to the CalRecycle SWIS, the 11 solid waste landfills within the study area have estimated to "cease

operation" dates[12] ranging from between 2016 and 2082. Of the remaining permitted capacity at area landfills, approximately 70% of the capacity is associated with landfills that are not expected to close for 18 to 70 more years (CalRecycle 2012).The disposal of the excavated material would occur at several different locations depending on the type of material and its origin. Based upon the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that construction and operation of the proposed conservation measures would not cause any exceedance of landfill capacity.

Electricity and Natural Gas

Conservation measures including habitat restoration and enhancement would, in some cases, involve substantial earthwork and ground disturbance. Construction activities could potentially disrupt utility service, and ground disturbance has potential to damage underground utilities. Similarly, the long-term conversion of existing utility corridors to habitat purposes could require the relocation and potential disruption of utility infrastructure. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

In summary, Alternative 1B would restore, enhance, and protect thousands of acres of habitat, including the restoration of up to 65,000 acres of tidal habitat. The locations, construction, and operational details for these and other conservation measures have not been identified. Adverse effects due to the construction, operation and maintenance activities associated with the conservation measures are not expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand. However, there is a potential for the disruption or relocation of utility infrastructure, which has the potential to result in an adverse effect. Further, no substantive adverse effects to solid waste management facilities are anticipated. Because the location and construction and operational details (i.e., water consumption and water sources associated with conservation measures) of these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain. This effect would be adverse.

***CEQA Conclusion*:** Implementation of the proposed conservation measures would not likely require alteration or construction of new government facilities resulting from an increased demand for public services and utilities. Measures to reduce stressors on covered species could result in additional water supply requirements, but are not expected to require substantial increases in demand for city or county water and wastewater treatment services. Construction and operation activities associated with the proposed conservation measures would result in a less than significant impact on solid waste management facilities based on the capacity of the landfills in the region and the waste diversion requirements set forth by the State of California. However, the location and construction and operational details (i.e., water consumption and water sources associated with conservation measures) for these facilities and programs have not been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be

[12] As defined by the California Department of Resources Recycling and Recovery (CalRecycle), for active disposal facilities, the ceased operations date is the estimated date when the facility will reach its permitted capacity. That date is found in or estimated from information in the current permit or permit application for a particular facility, including the approved closure plan for the facility (CalRecycle 2012).

reduced to a less than significant level. Therefore, this would be a significant and unavoidable impact.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

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

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of the proposed water conveyance facilities under Alternative 1C could affect law enforcement, fire protection, and emergency services and facilities through increased demand for services and direct and indirect effects on nearby facilities. Increased service demands would be experienced in the communities in which new construction workers relocate and in the areas in which construction would take place.

Increased Public Service Demands Associated with Workers Relocating to the Study Area

Although Alternative 1C would not result in a permanent increase in population that could tax the ability to provide adequate law enforcement, fire protection, and medical services, the increase in construction workers anticipated during the construction period of approximately 9 years could increase demands for these services during this period. An estimated peak of 5,300 workers would be needed during construction of the proposed water conveyance facilities (Table 20-2) (see Chapter 16, *Socioeconomics*). The estimated number of workers for Alternative 1C is similar to Alternative 1B, but higher than Alternative 1A, primarily because the level of effort estimated for culvert installation. It is anticipated that many of the construction jobs would be filled from workers within the five-county labor force. However, construction of the tunnels may require specialized worker skills not readily available in the local labor pool. As such, it is anticipated that some of the non-local workers will be imported from outside the five-county region. As described in Chapter 16, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million.

Because the construction population would primarily come from the existing five-county labor force which is already served by public service agencies and medical/emergency response services in the Plan Area (Appendix 20A, Tables 20A-1 to 20A-3), and because the minor increase in demand for these services from the population moving into the area to fill specialized jobs would be spread

across the large multi-county study area, construction of the alternative is not anticipated to result in a substantial increase in demand for law enforcement, fire protection or medical services. This effect is not considered adverse.

Increased Public Service Demands Associated with Construction Work Areas and Activities

Constructing the proposed water conveyance facilities could create additional demand for law enforcement, fire protection, or emergency medical services for construction property protection and related to the potential for construction-related accidents associated with hazardous materials spills, contamination, or fires.

The scale and duration of construction required for Alternative 1C could result in increased demand on law enforcement services, especially near major construction sites. As part of the alternative, DWR would implement an environmental commitment (as discussed in Appendix 3B, *Environmental Commitments*) that would ensure provision of 24-hour onsite private security at construction sites. Implementation of this environmental commitment would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection.

Construction of this alternative could also result in increased demands for service from law enforcement, fire protection, and emergency service agencies related to possible increases in construction-related accidents, either at job sites or along haul routes, or other incidents involving hazardous materials. DWR would incorporate the same environmental commitments identified for Alternative 1A into Alternative 1C that would address how to minimize the potential for construction-related accidents associated with hazardous materials spills, contamination, or fires (Appendix 3B, *Environmental Commitments*).

Incorporation of these environmental commitments would minimize the potential for construction-related accidents associated with hazardous materials spills, contamination, or fires, and reduce potential effects associated with increased service demands from new construction workers in the Plan Area.

In summary, the potential for Alternative 1C to result in an effect on law enforcement, fire protection, and emergency response services because of increased demand from new workers in the Plan Area during construction of the proposed water conveyance facilities is low. The minor increase in population associated with specialized construction jobs Plan Area during the construction period would not likely result in an increased demand for law enforcement, fire protection and medical services because the minor increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction. The incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires, and provide for on-site security at construction sites, would minimize potential effects related to demand for public services associated with construction property protection and the potential for construction-related accidents. Environmental commitments would be incorporated to reduce potential exposure of hazardous materials to the human and natural environment, thereby minimizing the potential related demand for fire or emergency services. This effect is not considered adverse.

Construction of Alternative 1C would not increase the demand on law enforcement, fire protection, and emergency response services from new workers in the Plan Area such that it would result in substantial adverse physical effects associated with the provision of, or the need for, new or physically altered governmental facilities. Impacts to emergency response times from construction

traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. Therefore, the effect on law enforcement, fire protection, and emergency response services from an increased demand in service from new workers in the Plan Area would not be adverse.

CEQA Conclusion: The majority of construction jobs are expected to be filled by the five-county labor force, and the minor increase in population associated with construction of specialized jobs (e.g., construction of tunnels) is not likely to result in an increased demand for law enforcement, fire protection, and medical services. This is because the minor increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction. There would be a less than significant impact on law enforcement, fire protection, and emergency response services from the increased demand of new workers who relocate to communities in the Plan Area during construction of the proposed water conveyance facilities.

Incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires, and provide for onsite security at construction sites, would minimize potential effects related to the potential for construction-related accidents, and increased demand for public services associated with construction property protection. Environmental commitments would also be incorporated to reduce potential exposure of hazardous materials to the human and natural environment, thereby minimizing the potential demand for fire or emergency services.

Construction of Alternative 1C would not require new or physically altered governmental facilities since it would not cause a marked increase in the worker population in the Plan Area, nor would it increase the potential for construction-related hazards. This impact would be less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 1C, construction of the proposed water conveyance facilities would not conflict with a public facility, and therefore, would not require construction or major alteration of such facilities. This effect would not be adverse.

CEQA Conclusion: Construction of the proposed water conveyance facilities under Alternative 1C would not require construction or major alteration of such facilities. Therefore, this impact would be less than significant. No mitigation is required.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of the proposed water conveyance facilities associated with this alternative would require an estimated peak of 5,300 workers (Table 20-2), most of whom will come from the existing five-county labor force. However, tunnel construction may require workers with specialized skills not readily available in the local labor pool. It is anticipated that some of the non-local workers would come from outside the five-county region, although this would represent a minor increase in population compared to the total 2020 projected regional population of 4.6 million.

Because most of the new BDCP construction jobs would be filled by workers from within the existing five-county labor force, it is anticipated that school-aged children from those families would already have planned to attend schools and school districts within the Plan Area and there would be

no increased demand for public school services from these workers (see Table 20A-4, Appendix 20A). While some workers who relocate from outside of the Plan Area could have school-age children resulting in an increase in public school enrollment, this minor increase in population in the Plan Area would not be expected to result in an increase in enrollment numbers substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility, within the Plan Area. Further, it would be difficult to identify specifically where within the region these new employees would reside. However, Table 20A-4 in Appendix 20A lists the 209 schools that serve the communities within the Plan Area and the current enrollment numbers for each school, which identifies a total enrollment of 148,880 across the Plan Area. The incremental increase in school-age children of construction personnel moving into the area for specialized jobs as a result of construction of Alternative 1C would likely be distributed through a number of schools within the Plan Area. This increase would not be substantial enough to exceed the capacity of any identified school or district, or to warrant construction of a new facility.

Overall, construction of Alternative 1C is not anticipated to result in a substantial increase in demand for public schools in the Plan Area and would not create a need for new or physically altered public schools. There would be no adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the existing five-county labor force. Any incremental increase in school-age children of construction personnel moving into the area for specialized construction jobs would likely be distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility or alternation of an existing facility within the Plan Area. The impact is less than significant. No mitigation is required.

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of the proposed water conveyance facilities would require water supply and wastewater treatment services. While general construction activities including dust control and soil compaction would require a supply of water, for purposes of this analysis, the major potable water supply needs will be for the concrete batch plants (see Chapter 3, *Description of Alternatives*) and field offices during construction. Potable water supply needed for construction was calculated based on the amount of concrete required for this alternative and the amount of water required by the field offices. Under this alternative, five concrete batch plants would be constructed onsite for temporary use during construction. Each batch concrete plant would require fresh water for batching, dust control, and washing requirements (including concrete truck washout). The potable water supply estimates also considered the number of field offices needed for each alternative and assumed that each field office would have an average of 10 workers, consume an average of 40 gallons of water per person per day (including drinking, hand washing, and toilet use), and be operational for 3,285 days (i.e., 9 years at 365 days per year). Table 20-3 presents the estimated potable water supply required for concrete (by each type of facility) and for field offices.

Based on the number of major structures associated with Alternative 1C, it is estimated that 14 field offices would be needed, which would use 17 million gallons of water. In addition, 114 million gallons of water would be used for activities associated with concrete batch plants. The total potable water supply needed under this alternative is estimated to be 131.5 million gallons (Table 20-3). It is anticipated that if there are existing water lines in the vicinity of the construction sites, the field

office will connect to them. Because construction of this alternative would primarily occur in rural parts of the Plan Area, and is not likely to occur in areas with municipal water service, it is not expected to impact municipal water systems. If there are no existing water lines in the vicinity, then field offices will require construction of a water tank. Water for construction will be provided by available sources to the extent possible; if needed, water may be brought to the construction sites in water trucks. Construction impacts associated with trucks, including water trucks, are addressed in Chapter 19, *Transportation*, Chapter 22, *Air Quality and Greenhouse Gases*, and Chapter 23, *Noise*. As such, this alternative would not likely adversely affect municipal water supplies. As such, this alternative would not likely adversely affect municipal water supplies. Additionally, the potable water demand would be temporary and limited to the construction period.

Tunnel boring would create a substantial amount of wastewater. This material, part of the RTM, would also include soils, foaming agents, and other materials. This analysis assumes that RTM would undergo treatment in isolated RTM storage areas located throughout the Plan Area (see Figure M3-3 in the Mapbook Volume), and therefore, wastewater related to tunnel boring RTM would not require treatment at wastewater treatment facilities. As part of the alternative, DWR would implement an environmental commitment (as discussed in Appendix 3B, *Environmental Commitments*) that would dispose of and reuse spoils, reusable tunnel material, and dredged material. Concrete batch plants would also create wastewater, which would be treated onsite at designated concrete batch plant sites. Wastewater generated during construction at field offices and temporary construction facilities would be served by temporary portable facilities (e.g., portable toilets). As discussed in Chapter 8, *Water Quality*, as part of the Environmental Commitments (Appendix 3B) for each alternative, DWR will be required to conduct project construction activities in compliance with the State Water Board's *NPDES Stormwater General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order No. 2009-0009-DWQ/NPDES Permit No. CAS000002). This General Construction NPDES Permit requires the development and implementation of a SWPPP that outlines the temporary construction-related BMPs to prevent and minimize erosion, sedimentation, and discharge of other construction-related contaminants, as well as permanent post-construction BMPs to minimize adverse long-term stormwater related–runoff water quality effects.

Considered across the alternative, potable water supply needs are substantial in volume; however, these requirements would be met over duration of the construction period which would be approximately 9 years, and would be anticipated to be met with non-municipal water sources without any need for new water supply entitlements. Further, wastewater treatment services required for this alternative would be provided by temporary facilities and treated onsite. Construction of Alternative 1C would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

***CEQA Conclusion*:** While construction of Alternative 1C would require 95.3 million gallons of potable water, this supply could be met by non-municipal sources without any new water supply entitlements. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Water for construction activities would be brought to the site in water trucks. Wastewater services for construction crews would be provided by temporary portable facilities. Construction of Alternative 1C would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact is less than significant. No mitigation is required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Potential effects associated with an increased demand for solid waste management providers in the Plan Area and surrounding communities as a result of waste generated from construction of the proposed water conveyance facilities would be similar to those described under Alternative 1A. For purposes of this analysis, an estimate of the total quantity of excavated material to be disposed at a landfill was calculated for each facility of the alternative based on construction cost estimating documents. Construction of the west alignment alternatives, including Alternative 1C, is estimated to generate 35,714 tons of excavated material. As part of the alternative, DWR would implement an environmental commitment (as discussed in Appendix 3B, *Environmental Commitments*) that would dispose of and reuse spoils, reusable tunnel material, and dredged material. Based on a review of the typical additives in RTM, it is assumed that the RTM can be disposed of on site; however, to be conservative, an estimated 0.1% of the excavated waste, accounting for any hazardous substances or wastes coming from farming operations or previous land uses, would require disposal at a landfill[13]. Based on these assumptions, up to 35.71 tons (i.e., 0.1% of 35,714 tons) of excavated materials would require disposal at a landfill. Under this alternative, the total volume of excavated material that would require disposal at a landfill during the construction period (35.715 tons) represents a negligible impact on the 11 solid waste landfills which have a total remaining permitted capacity of over 300 million tons.

Construction debris, including debris from structure demolition, power poles, utility lines, piping, and other materials would also be generated as a result of construction of this alternative. For purposes of this analysis, the volume of construction debris generated during construction was based on estimated truck trips that were assumed to be potentially associated with disposal of construction debris at a landfill. This includes all trips by trucks categorized as Heavy Construction T7 that are likely to carry debris (flatbed, dump and tractor) detailed in Chapter 22, *Air Quality and Greenhouse Gases* (Table 22B-5 of Appendix 22B, *Air Quality Assumptions*). Under this alternative, there would be an average of 45 outbound trips per day[14]. One truck typically holds approximately 20 cubic yards of material. Therefore, an average of 900 cubic yards (648 tons[15]) of construction debris would be generated per day, totaling 2,016,798 (1,452,094 tons) of construction debris over the 9-year construction period.

Although it is not known specifically which landfills would be utilized during construction of the proposed water conveyance facilities, disposal of demolition and excavated material would be expected to occur at several different locations depending on the type of material and its origin. It is

[13] The percentage of waste excavation that might need specialized disposal at a landfill site was determined in consultation with the U.S. Department of Energy (DOE) Hazardous Substances Coordinator.

[14] This assumption is based on 1B alignment emissions factors scaled as detailed in Section 22A.1.4.3 of Appendix 22A. Since GHG emissions for the west alignment were unavailable, emissions for this alternative were calculated by using estimates for the east alignment due to similarities between the alternatives, and scaling them based on project features identified for the west alignment. As provided in Chapter 22, *Air Quality and Greenhouse Gases*, it is assumed that each truck will make a maximum of 4 roundtrips (or 8 one-way trips). Based on the assumptions detailed in Tables 22B-5 through 22B-8 of Appendix 22B, there would be 53 heavy duty dump trucks associated with construction of Alternatives 1C, 2C, and 6C (west alignment alternatives), which would result in a maximum of 100,840 trips potentially associated with the disposal of construction debris at a landfill over the 9-year construction period. Although the truck trips during construction may not all be used for excavated material disposal, this number was used to provide a conservative estimate of the amount of excavated material that would be disposed.

[15] Conversion assumes 1 cubic yard of excavated material is approximately 0.72 ton.

standard practice that the construction contractors handle and dispose of all hazardous and non-hazardous materials during construction. Of the solid waste facilities in the Plan Area counties, there are 30 active facilities that can handle solid waste, including 11 solid waste landfills with a remaining permitted capacity of well over 300 million tons, and 18 large volume transfer/processing facilities (see Appendix 20A, Table 20A-6 for a listing of each facility's name, location, permitted capacity, remaining capacity, maximum permitted daily throughput, and proximity to the statutory Delta). According to the CalRecycle SWIS, the 11 solid waste landfills within the study area have estimated "cease operation" dates[16] ranging from between 2016 and 2082. Of the remaining permitted capacity at area landfills, approximately 70% of the capacity is associated with landfills that are not expected to close for 18 to 70 more years (CalRecycle 2012).

Of the estimated 1,452,094 tons of construction debris that would be generated under this alternative, a percentage would be diverted from landfills to the maximum extent feasible at the time of demolition. Even before consideration of diversion, the construction debris would not adversely affect capacity of available landfills because it represents a negligible amount of the total remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity.

Based on a 2006 characterization study of construction and demolition waste conducted by the CalRecycle, Alternative 1C would be considered reasonably equivalent to that study's "Other C&D activities that include construction or demolition materials generated from the building, repair, and/or demolition of roads, bridges and other public infrastructure." Divertible categories of material included recyclable aggregates; recyclable wood; rock, dirt, and sand; recyclable metal; and other recoverable material. All non-divertible materials are categorized as other MSW (California Integrated Waste Management Board 2006:46).

Based on the CIWMB (now CalRecycle) study, approximately 93% of waste generated by the Other C&D subsector was estimated to be divertible. The 10 most prevalent materials for Other C&D waste are shown in Table 20-4. Nine of the top ten materials for Other C&D waste were considered divertible; only painted/demolition gypsum board was not. The most prominent single material type was large asphalt pavement without re-bar, which accounted for approximately 44% of total waste diverted, whereas all other material types in this waste subsector accounted for less than 10% of other C&D waste (California Integrated Waste Management Board 2006:31).

Table 20-4 identifies some of the types of construction and demolition debris that would be anticipated to be generated as a result of construction of Alternative 1C. Demolished concrete could be sent to a concrete recycling facility. Other select materials, such as doors, windows, siding, lumber, timbers, and steel, may also be salvaged and reused. Diverting over 90% of this waste from landfills would substantially lessen any potential effects to Plan Area solid waste management providers. The materials requiring disposal that are considered non-divertible would be hauled offsite to a suitable landfill depending on the type of material and its origin.

While a 90% diversion rate is not always feasible in every instance, the State Agency Model IWMA (Chapter 764, Statutes of 1999, Strom-Martin) which took effect on January 1, 2000 as part of AB 75, requires that each state agency (including DWR) is mandated to develop and implement an IWMP. The provisions of the IWMA require all state agencies and large state facilities to divert at least 50%

[16] As defined by the California Department of Resources Recycling and Recovery (CalRecycle), for active disposal facilities, the ceased operations date is the estimated date when the facility will reach its permitted capacity. That date is found in or estimated from information in the current permit or permit application for a particular facility, including the approved closure plan for the facility (CalRecycle 2012).

of their solid waste from disposal facilities on and after January 1, 2004. Another requirement of the law is that each state agency and large facility is to submit an annual report to CalRecycle summarizing its yearly progress in implementing waste diversion programs. All solid waste management activities for the construction and operations and maintenance associated with Alternative 1C would be conducted in accordance with regulations set forth by CalRecycle, and any applicable IWMP developed for affected jurisdictions. Although it is not known which landfills will be utilized during construction of the proposed water conveyance facilities, as construction contractors will handle disposal of demolition and excavated material, it is assumed that at least 50% of waste will be diverted in compliance with the provisions of the IWMA. Therefore, after consideration of diversion requirements, the volume of construction debris that requires disposal at landfills represents a negligible effect on the remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity.

Overall, the construction waste that could be generated by implementing Alternative 1C would not result in an adverse effect on the capacity of available landfills because 50% or more of construction waste generated by this alternative would be diverted (in accordance with diversion requirements set forth by the State Agency Model IWMA and BMP 13 [Appendix 3B, *Environmental Commitments*]), and the construction debris and excavated material that would require disposal at a landfill could be accommodated by and have a negligible effect on the remaining permitted capacity of Plan Area landfills. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. There would be no adverse effect.

CEQA Conclusion: Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it would be expected that construction of the proposed water conveyance facilities would not cause any exceedance of landfill capacity. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Therefore, there would be a less than significant impact on solid waste management facilities.

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 1C, construction of some elements could disrupt utility services or require relocation of existing facilities. The alternative could result in environmental effects in and around areas temporarily or permanently affected by relocation activities.

Due to the nature of underground construction, the exact location of underground utilities cannot be guaranteed based on construction documents; the location can only be determined by careful probing or hand digging, in compliance with Article 6 of the Cal/OSHA Construction Safety Orders. Underground Service Alert, a service, which provides utility location services, is not available until the time of construction. Construction activities for Alternative 1C could result in damage to or interference with existing water, sewer, storm drain, natural gas, oil, electric, and/or communication lines and, in some cases, could require that existing lines be permanently relocated, potentially

causing interruption in service. Numerous utility lines of varying sizes are located along and across alternative alignments; and at the various pumping plants and forebay sites.

This water conveyance alignment, along with its associated physical structures, would cross 9 power/electrical transmission lines (2 with multiple crossings) (Chapter 24, *Hazards and Hazardous Materials*, Figure 24-6), 5 natural gas pipelines (Table 20-4 and Chapter 24, *Hazards and Hazardous Materials*, Figure 24-3), 9 active oil/gas wells (Chapter 24, *Hazards and Hazardous Materials*, Figure 24-5), the Mokelumne Aqueduct, the Los Vaqueros Pipeline, and approximately 124 miles of agricultural delivery canals and drainage ditches, including approximately 45 miles on Ryer Island, 37 miles on the Netherlands (north of Ryer Island), 20 miles on Byron Tract, and 12 miles on Merritt Island. The potential for construction of the proposed conveyance facilities to cause disruptions to agricultural infrastructure in the study area are addressed in Chapter 14, *Agricultural Resources*. Specifically, Chapter 14 addresses potential conflicts with existing agricultural irrigation and drainage facilities as a result of construction. Additionally, local electrical distribution lines and communication lines occur along the conveyance alignment and could be disrupted or relocated to allow for the construction of project facilities. As under Alternative 1A, in some cases, disruption of infrastructure and facility operation would be avoided because BDCP facilities would cross either over or under the existing utilities. However, in some cases, construction of BDCP facilities could require utilities to be relocated. Relocation of local electrical facilities may also be necessary.

Construction of the proposed conveyance facility would involve site grading and similar activities requiring heavy equipment use. These construction activities could result in the unintentional damage to or disruption of underground utilities as a result of trenching, augering, or other ground disturbing activity. Disruption of certain utilities, such as natural gas pipelines, could result in public health hazards (e.g., explosions). Construction could also result in damage to or disruption of overhead utilities when establishing electrical interconnection of this project to the electric grid. Temporary transmission lines would extend existing power infrastructure (transmission lines and substations) to construction areas. In some cases, the operation of these facilities would not be disrupted because facilities would cross over or under the existing utilities. For instance, most natural gas pipeline crossings are near the surface (less than 30 feet below ground surface) and the tunnel segments associated with this alternative would be placed more than 80 feet below ground surface. However, construction of certain facilities would require relocation of utilities.

The alignment of the canal and other conveyance facilities constructed under this alternative would cross 69 kV, 115 kV, and 500 kV power transmission lines owned by Pacific Gas & Electric, the latter of which would cross the alignment eight times. The alignment would also cross a Western 500 kV line. Electrical distribution lines along many roads would require some relocation. Oil and gas pipelines could also require relocation. Abandoned gas wells within the construction ROW would be excavated and capped to a depth of 10 feet below the bottom of the canal or, in temporary construction areas, to a depth appropriate to site conditions. Out of 629 oil and natural gas wells in the five county area, only four to six wells may need to be moved or abandoned. The 629 wells amount to 1-6% of the county's production, so the potential loss of 4 to 6 wells would not significantly impact utilities. The Mokelumne Aqueduct would be rerouted to cross over the canal at the siphon under the BNSF Railroad or as part of the Orwood Road Bridge. Construction of project facilities would also involve site grading, trenching, boring, and other excavation work. Ground disturbance has the potential to damage utility infrastructure and disrupt delivery of utility services. Because relocation and disruption of utility infrastructure would be required under this alternative and would have the potential to create effects through the relocation of facilities, this alternative would result in an adverse effect on utilities. Mitigation Measures UT-6a, UT-6b, and UT-6c would be

available to reduce the severity of this effect. The potential damage and disruption to buried and overhead electrical transmission lines would be similar for telecommunications.

Effects would be more likely to occur if utilities were not carefully surveyed prior to construction, including contact with local utility service providers. Implementation of pre-construction surveys, and utility avoidance or relocation if necessary, would minimize any potential disruption. Mitigation Measures UT-6a, UT-6b, and UT-6c would require relocation or modification of existing utility systems, including, but not limited to, public and private ditches, pumps, and septic systems, in a manner that does not affect current operational reliability for existing and projected users; coordination of utility relocation and modification with utility providers and local agencies to integrate potential other construction projects and minimize disturbance to the communities; and verification of utility locations through field surveys and services such as Underground Service Alert.

Because relocation and disruption of existing utility infrastructure, including water, sewer, storm drain, natural gas, oil, electric, and/or communication lines, would be required under this alternative, this would be an adverse effect.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting public utility service by crossing over or under existing infrastructure. However, construction of facilities would conflict with utility facilities in some locations. Alternative 1C would require relocation of regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Generally, this effect under Alternative 1C would have effects similar to those described under Alternative 1A.

Public Services

Operation and maintenance activities would require minimal labor. For the purposes of this analysis, it was estimated that weekly operations and maintenance would require approximately 190 workers (Table 20-2), including, maintenance crew, management, repair crew, pumping plant crew, and dewatering crew. These activities would take place along the entire alternative alignment. Given the limited number of workers involved and the large number of work sites, it is not anticipated that routine operations and maintenance activities or major inspections would result in substantial demand for law enforcement, fire protection, or emergency response services. In addition, operation and maintenance would not place service demand on public schools or libraries. The operation and maintenance of the proposed water conveyance facilities would not result in the need for new or physically altered government facilities as a result of increased need for public services.

Utilities

Water and Wastewater

Operation and maintenance of the Alternative 1C facilities would involve use of water for pressure washing intake screen panels and basic cleaning of building facilities and other equipment. Additionally, pumping plants would include permanent restroom facilities, which would be equipped with a sanitary gravity drainage leading to a wastewater holding tank. A potable water system would provide water to pumping plant welfare facilities and, if required, safety showers. This supply would be taken from the nearest clean water conveyance system if available. If not available, plants would include a self-contained water filtration and treatment system. Raw water downstream would be evaluated for potential use in a non-potable system serving hose faucets and water-cooled condensing units for plant equipment. Quantities of water needed for these purposes would be anticipated to be relatively small compared with municipal supplies. Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities. The operation and maintenance of the proposed water conveyance facilities would not result in the need for new water supply entitlements, or require construction of new water or wastewater treatment facilities or expansion of existing facilities.

Solid Waste

Operation and maintenance activities associated with the Alternative 1C water conveyance facilities is not expected to generate solid waste such that there would be an increase in demand for solid waste management providers in the Plan Area and surrounding communities. However, operation and maintenance of the proposed water conveyance facilities includes a sedimentation basin that would be constructed between the intake structure and the pumping plant (detailed in Chapter 3, *Description of Alternatives*) to collect sediment load from the river. Although the intake fish screens would remove debris and sediment from the intake inflow, a sedimentation basin would be constructed to remove the suspended solids that pass through the screen.

The volume of solids generated on a daily basis would depend on the volume of water pumped through the intakes, as well as the sediment load of the river. 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 up to 253,000 dry pounds per day. The annual volume of solids is anticipated to be approximately 486,000 cubic feet (dry solids).

As designed, it is anticipated that a portion of the solids would be stored and reused at alternative facilities and some portion would be transported for offsite disposal. Solids from sediment load would not exceed the permitted capacity or adversely impact the lifespan of area landfills.

Electricity and Natural Gas

Operation and maintenance of proposed water conveyance facilities under this alternative would require new permanent transmission lines for intakes, pumping plants, operable barriers, boat locks, and gate control structures throughout the various proposed conveyance alignments and construction of project facilities. Electrical power to operate the new north Delta pumping plant facilities would be delivered through a single 230 kV transmission line. Possible alignments for the 230 kV transmission line are shown in Figure 3-25 and the alignment selected for analysis under Alternative 1C is shown in Figure M3-3 in the Mapbook Volume. Two utility grids could supply power to the BDCP conveyance facilities: PG&E (under the control of the California Independent System Operator) and the Western. The electrical power needed for the conveyance facilities would be procured in time to support construction and operation of the facilities.

Construction of permanent transmission lines would not require improvements to, or affect, the existing physical power transmission system. Operation and maintenance of the proposed water conveyance facilities would not result in the disruption or relocation of electric or natural gas utilities. Effects associated with energy demands of operation and maintenance of the proposed water conveyance facilities are addressed in Chapter 21, *Energy*.

Overall, operation and maintenance of the conveyance facilities under Alternative 1C would not result in adverse effects on public service demands, water supply and treatment capacity, wastewater treatment facilities, solid waste facilities, or conflict with local and regional utility lines. There would not be an adverse effect.

***CEQA Conclusion*:** Operation and maintenance activities associated with the proposed water conveyance facilities would not result in the need for the provision of, or the need for, new or physically altered government facilities from an increased need for public services; construction of new water and wastewater treatment facilities or generate a need for new water supply entitlements; generate solid waste in excess of permitted landfill capacity; or result in the disruption or relocation of utilities. The impact on public services and utilities would be less than significant. No mitigation is required.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Public Services

Alternative 1C would restore up to 83,900 acres under conservation measures to restore tidal habitat, seasonally inundated floodplain, grassland communities, vernal pool complex habitat, and nontidal marsh areas. Additionally, 20 linear miles of channel margin habitat would be enhanced. While locations of conservation measures have not been selected, implementation of conservation measures for habitat restoration and channel margin habitat enhancement would occur within the ROAs described in Chapter 3, *Description of Alternatives*. Potential effects of implementing conservation measures on law enforcement, fire protection and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. Because of the scale and duration of construction associated with implementing conservation measures, there could be an increased demand for public services. This effect would not be considered adverse with the implementation of environmental commitments described in Appendix 3B, *Environmental Commitments*. These environmental commitments have been incorporated into this alternative and would provide for onsite security at construction sites and minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation measures.

Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation measures would not result in potential effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, public schools).

Utilities

Water and Wastewater

Implementation of some of the conservation measures, in particular those involved with restoration and enhancement of some habitat types, could require a water supply, but would not require municipal water sources. Conservation measures that could increase need for water supply are restoration of tidal, seasonally inundated floodplain, channel margin, riparian, grassland, vernal pool complex, and nontidal marsh habitats; and maintenance of these habitats as well as alkali seasonal wetland complex, and managed wetlands habitats. Additionally, measures related to the reduction of stressors on covered species would not generally require a municipal water supply or create wastewater. Exceptions to this would potentially include the establishment of a new fish hatchery, expansion of facilities to support dissolved oxygen levels in the Stockton Deep Water Ship Channel, and activities targeted toward reducing the risk of invasive species introduction on recreational vessels. For example, boat cleaning stations proposed under the Recreational Users Invasive Species Program (CM20) would potentially draw substantial amounts of water from municipal supplies. However, because the location and construction or operational details (i.e., water consumption and water sources associated with conservation measures) surrounding these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect would be adverse.

Solid Waste

Implementation of some of the conservation measures would result in construction debris, green waste, and hazardous waste. Specifically, implementation of habitat restoration and enhancement proposed under CM4–CM11 would involve restoration, enhancement and management of various types of habitat. Construction activities could require clearing and grubbing, demolition of existing structures (e.g., roads and utilities), surface water quality protection, dust control, establishment of storage areas and stockpile areas, temporary utilities and fuel storage, and erosion control. The estimated tonnage of construction debris and solid waste that would be generated from construction activities associated with the proposed conservation measures is unknown at this time. However, there is a remaining capacity of well over 300 million tons in nearby landfills (see Table 20A-6 in Appendix 20A for a listing of each facility's name, location, permitted capacity, remaining capacity, maximum permitted daily throughput, and proximity to the statutory Delta boundary). According to the CalRecycle SWIS, the 11 solid waste landfills within the study area have estimated to "cease operation" dates[17] ranging from between 2016 and 2082. Of the remaining permitted capacity at area landfills, approximately 70% of the capacity is associated with landfills that are not expected to close for 18 to 70 more years (CalRecycle 2012).The disposal of the excavated material would occur at several different locations depending on the type of material and its origin. Based upon the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that the construction and operation of the proposed conservation measures would not cause any exceedance of landfill capacity.

Electricity and Natural Gas

Conservation measures including habitat restoration and enhancement would, in some cases, involve substantial earthwork and ground disturbance. Construction activities could potentially disrupt utility service, and ground disturbance has potential to damage underground utilities. Similarly, the long-term conversion of existing utility corridors to habitat purposes could require the relocation and potential disruption of utility infrastructure. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

In summary, Alternative 1C would restore, enhance, and protect thousands of acres of habitat, including the restoration of up to 65,000 acres of tidal habitat. The locations, construction, and operational details for these and other conservation measures have not been identified. Adverse effects due to the construction, operation and maintenance activities associated with the conservation measures are not expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand. However, there is a potential for the disruption or relocation of utility infrastructure, which has the potential to result in an adverse effect. Further, no substantive adverse effects to solid waste management facilities are anticipated. Because the location and construction and operational details (i.e., water consumption and water sources associated with conservation measures) for these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain. This effect would be adverse.

[17] As defined by the California Department of Resources Recycling and Recovery (CalRecycle), for active disposal facilities, the ceased operations date is the estimated date when the facility will reach its permitted capacity. That date is found in or estimated from information in the current permit or permit application for a particular facility, including the approved closure plan for the facility (CalRecycle 2012).

***CEQA Conclusion*:** Implementation of the proposed conservation measures would not likely require alteration or construction of new government facilities due to an increased demand for public services and utilities. Several measures to reduce stressors on covered species could result in additional water supply requirements, but are not expected to require substantial increases in demand for city or county water and wastewater treatment services. Construction and operation activities associated with the proposed conservation measures would result in a less than significant impact on solid waste management facilities based on the capacity of the landfills in the region and the waste diversion requirements set forth by the State of California. However, the location and construction or operational details (i.e., water consumption and water sources associated with conservation measures) for these facilities and programs have not been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less than significant level. Therefore, this would be a significant unavoidable impact.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

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

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the provision of law enforcement, fire protection, and emergency response services as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1A. Increased service demands would be experienced in the communities in which new construction workers relocate and in the areas in which construction would take place. However, it is anticipated that many construction jobs would be filled from the existing labor force in the five-county Plan Area region. Effects on services from the presence of new workers in the Plan Area would be anticipated to be marginally greater for this alternative because they would extend to an additional location with the potential construction of an operable barrier at the Head of Old River. The minor increase in construction workers relocating into the Plan Area for specialized jobs (e.g., tunnel construction) during the construction period of approximately 9 years is not anticipated to result in a substantial increase in demand for law enforcement, fire protection and medical services because the estimated increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction.

Similarly, the scale and duration of construction required for Alternative 2A could result in increased demand on law enforcement services, especially near major construction sites. Incorporation of an environmental commitment that would provide 24-hour onsite private security at construction sites (Appendix 3B, *Environmental Commitments*) would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection. Incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires would reduce adverse effects related to the potential demand for law enforcement, fire protection, or emergency services (Appendix 3B, *Environmental Commitments*).

Construction of Alternative 2A would not increase the demand on law enforcement, fire protection, and emergency response services from new workers in the Plan Area such that it would result in the need for, new or physically altered governmental facilities. Impacts to emergency response times from construction traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. Accordingly, there would be no adverse effect.

***CEQA Conclusion*:** The potential for impacts on law enforcement and fire services and facilities is not expected to be significant because the estimated increase in population in the Plan Area associated with construction of the alternative during peak construction would be distributed over multiple cities and counties within the Plan Area. In addition, environmental commitments would be incorporated into the alternative to reduce effects related to demand for law enforcement, fire protection, and emergency response services at or near construction sites from new construction workers in the Plan Area, and effects on local law enforcement agencies associated with construction property protection. Construction of Alternative 2A would not require new or physically altered governmental facilities to support the needs of new workers in the Plan Area. These impacts would be considered less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of Alternative 2A would have the same potential conflict with the Courtland FPD's Hood Fire Station as under Alternative 1A, possibly requiring replacement of the facility (Figure 20-5). Mitigation Measure UT-2 would be available to lessen the severity of the potential effect to not adverse by ensuring continuation of fire protection services in the Courtland Fire Protection District service area, by the Courtland Fire Station which also serves the area. Implementation of Mitigation Measure UT-2 would also require the construction of a replacement facility, which could result in adverse environmental effects. Therefore, this effect would be adverse. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and effects would not be adverse.

***CEQA Conclusion*:** Depending on final design of the alignment, the alternative could require relocation of Courtland FPD's Hood Fire. While implementation of Mitigation Measure UT-2 would lessen the severity of the impact by ensuring continuation of fire protection services in the Courtland FPD service area, construction of a replacement facility could cause significant environmental effects. Construction of a replacement fire station would require subsequent environmental review under CEQA. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and this impact could be less than significant.

Mitigation Measure UT-2: Ensure the Continuation of Fire Protection Services by the Courtland Fire Protection District

Please see Mitigation Measure UT-2 under Impact UT-2 in the discussion of Alternative 1A.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: As under Alternative 1A, because most of the BDCP construction jobs would be filled by workers from within the existing five-county labor force, it is anticipated that school-aged children from those families would already have planned to attend schools in school districts within the Plan Area and there would be no increased demand for public school services from these workers (see Table 20A-4, Appendix 20A). Although some workers who relocate from outside of the Plan Area could have school-age children, resulting in an increase in public school enrollment, this minor increase in population in the Plan Area for a limited time, and the likelihood that they would be distributed among multiple schools and districts, would not be expected to result in an increase in enrollment numbers substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. There would not be an adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the five-county labor force. The incremental increase in school-age children of construction personnel moving into the area for specialized construction jobs (e.g., tunnel construction) would likely be distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. The impact on public schools is less than significant. No mitigation is required.

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the need for expanded water or wastewater treatment facilities would be similar to those for Alternative 1A. For purposes of this analysis, the amount of water supply required under this alternative would be the same as under Alternative 1A. As such, the total potable water supply needed under this alternative is estimated to be 168.1 million gallons (Table 20-3). While water needs would be substantial, these requirements would be temporary and could be met with non-municipal water sources without any new water supply entitlements. Also similar to Alternative 1A, wastewater created as a result of tunnel boring and concrete batching would be treated onsite at isolated RTM storage areas and designated concrete batch plant sites, respectively. Construction of Alternative 2A would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

CEQA Conclusion: While construction of this alternative would require a substantial supply of water, this supply could be met by non-municipal sources. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Construction of Alternative 2A would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact would be less than significant. Mitigation is not required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Potential effects associated with an increased demand for solid waste management providers in the Plan Area and surrounding communities as a result of waste generated from construction of the proposed water conveyance facilities would be similar to those described under Alternative 1A. Minor additional needs for landfill services may be generated by the construction of an operable barrier. Under Alternative 2A, the total volume of excavated material that would require disposal at a landfill during the construction period (17.85 tons) represents a negligible impact on the 11 solid waste landfills which have a total remaining permitted capacity of over 300 million tons. Of the estimated 603,469 tons of construction debris that would be generated under this alternative, it assumed that 561,226 tons would be divertible, and that at least 50% (or 301,734 tons) of construction waste would be diverted (in accordance with diversion requirements set forth by the State Agency Model IWMA). Therefore, after consideration of diversion requirements, the volume of construction debris that require disposal at landfills represents a negligible effect on the remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 2A would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There would be no adverse effect.

***CEQA Conclusion*:** Based upon the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that construction of the proposed water conveyance facilities would not cause any exceedance of landfill capacity. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 2A would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. Therefore, there would be a less than significant impact on solid waste management facilities. No mitigation is required.

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Disruption of utilities and relocation of existing utility facilities under Alternative 2A would be similar to that described under Alternative 1A, with possible variations stemming from potential conflicts associated with construction of an operable barrier and of Intakes 6 and 7 rather than Intakes 4 and 5. The conveyance alignment constructed under this alternative would cross or interfere with approximately 41 miles of agricultural delivery canals and drainage ditches, including approximately 7 miles on Victoria Island, 5 miles on Bacon Island, and 4 miles on Byron Tract. Regional power transmission lines and one natural gas pipeline would require relocation.

Additionally, active gas wells may need to be plugged and abandoned. Relocation of additional facilities near proposed forebays, RTM, and borrow or spoils areas could also be necessary. The potential damage and disruption to buried and overhead electric transmission lines would be similar for telecommunication infrastructure. Because relocation and potential disruption of existing utility infrastructure would be required and could result in environmental effects, this effect would be adverse.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting existing facilities by crossing over or under infrastructure. However, construction of facilities would conflict with existing utility facilities in some locations. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: As under Alternative 1A, operation and maintenance activities would require minimal labor. Given the limited number of workers involved and the large number of work sites, it is not anticipated that routine operations and maintenance activities or major inspections would result in substantial demand for law enforcement, fire protection, or emergency response services. In addition, operation and maintenance would not place service demand on public schools or libraries. The operation and maintenance of the proposed water conveyance facilities would not result in potential effects associated with the need to construct new government facilities as a result of increased need for public services.

Similar to Alternative 1A, potential effects associated with operation and maintenance of water conveyance facilities would be similar to those described under Alternative 1A. Therefore, Alternative 2A would not result in physical effects associated with the provision of new or physically altered government facilities.

Because requirements for water and wastewater treatment under operations and maintenance of the water conveyance facilities would be primarily associated with intakes and intake pumping plant facilities, these effects are similar to those described under Alternative 1A. However, the location of the effects would differ following the construction of an operable barrier at the Head of Old River and of Intakes 6 and 7 instead of 4 and 5. Quantities of water needed for these purposes would be anticipated to be relatively small compared with municipal supplies. Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities.

Similar to Alternative 1A, the operation and maintenance activities associated with the proposed water conveyance facilities would not be expected to generate solid waste such that there would be an increase in demand for solid waste management providers in the Plan Area and surrounding communities. Therefore, there would be no or minimal effect to solid waste management facilities.

As with Alternative 1A, operation and maintenance of proposed water conveyance facilities under this alternative would not require improvements to the existing physical power transmission system. As such, operation and maintenance of the proposed water conveyance facilities would not be expected to result in the disruption or relocation of electric or natural gas utilities. Effects associated with energy demands of operation and maintenance of the proposed water conveyance facilities are addressed in Chapter 21, *Energy*.

Overall, operation and maintenance of the conveyance facilities under Alternative 2A would not result in adverse effects on public service demands, water supply and treatment capacity, wastewater treatment facilities, solid waste facilities, or conflict with local and regional utility lines. There would not be an adverse effect.

CEQA Conclusion: Operation and maintenance of the proposed conveyance facility would not result in the need for the provision of new or physically altered government facilities due to the increased need for public services; construction of new water and wastewater treatment facilities or generate a need for new water supply entitlements; generate solid waste in excess of permitted landfill capacity; or result in the disruption or relocation of utilities. The impact on public services and utilities would be less than significant. No mitigation is required.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Potential effects associated with the need to construct new government facilities to meet an increased need for public services resulting from the implementation of restoration conservation measures and measures designed to reduce the effect of species-level stressors would be similar to those 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. Because the location for the implementation of conservation activities is not known at this point, it is not possible to determine whether the construction of conservation measures would require demolition and replacement of a government facility.

Effects on municipal water facilities from conservation measures would be similar to those for Alternative 1A. Some activities associated with these measures could require municipal water and wastewater treatment services; however, because the location and construction and operational details (i.e., water consumption and water sources associated with conservation measures) of these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain.

Potential effects associated with an increase in demand for solid waste management providers in the Plan Area and surrounding communities from solid waste generated by construction and operation of the proposed conservation measures would be similar to those described under Alternative 1A. Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that construction and operation of the proposed conservation measures would not cause any exceedance of landfill capacity.

Conservation measures including habitat restoration and enhancement would be similar to those under Alternative 1A. The implementation of conservation measures could result in utility service disruption or possible damage to underground utilities. Similarly, the long-term conversion of existing utility corridors to habitat purposes could require the relocation of utility infrastructure, which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

Potential effects of implementing conservation measures on law enforcement, fire protection and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. Because of the scale and duration of construction associated with implementing conservation measures, there could be an increased demand for public services. This effect would not be considered adverse with the implementation of environmental commitments described in Appendix 3B, *Environmental Commitments*. These environmental commitments have been incorporated into this alternative and would provide for onsite security at construction sites and minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation components would not result in potential effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, public schools).

The locations, construction, and operational details for these and other conservation components have not been identified. Adverse effects due to the construction, operation and maintenance activities associated with the conservation components are not expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand. Potential effects of implementing conservation measures on law enforcement, fire protection and emergency response services within the ROAs would not be adverse with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation measures. However, there is a potential for the disruption or relocation of utility infrastructure, which has the potential to result in an adverse effect. Further, no substantive adverse effects to solid waste management facilities are anticipated. However, because the location and construction and operational details (i.e., water consumption and water sources associated with conservation

measures) related to these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain. This effect would be adverse.

***CEQA Conclusion*:** Implementation of the proposed conservation measures would not likely require alteration or construction of new government facilities due to increased need for public services and utilities. Several measures to reduce stressors on covered species could result in additional water supply requirements, but are not expected to require substantial increases in demand on municipal water and wastewater treatment services. Construction and operation activities associated with the proposed conservation measures would result in a less than significant impact on solid waste management facilities based upon the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California. Potential impacts of implementing conservation measures on law enforcement, fire protection and emergency response services within the ROAs would be less than significant with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation measures. However, the location and construction and operational details (i.e., water consumption and water sources associated with conservation measures) of these facilities and programs have not yet been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less than significant level. Therefore, this would be a significant unavoidable impact.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

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

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the provision of law enforcement, fire protection, and emergency response services as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1B; however, effects from the presence of new workers in the Plan Area would be anticipated to be marginally greater and extend to an additional location with the potential construction of an operable barrier at the Head of Old River. Increased service demands would be experienced in the communities in which new construction workers relocate and

in the areas in which construction would take place. The minor increase in construction workers relocating into the Plan Area for specialized jobs during the construction period of approximately 9 years is not anticipated to result in a substantial increase in demand for law enforcement, fire protection and medical services because the estimated increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction.

Similarly, the scale and duration of construction required for Alternative 2B could result in increased demand on law enforcement services, especially near major construction sites. Incorporation of an environmental commitment that would ensure provision of 24-hour onsite private security at construction sites (Appendix 3B, *Environmental Commitments*), including the additional location under this alternative for construction of an operable barrier at the Head of Old River, would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection.

Incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires would be available to reduce adverse effects related to the potential demand for law enforcement, fire protection, or emergency services (see Appendix 3B, *Environmental Commitments*).

Construction of Alternative 2B would not increase the demand on law enforcement, fire protection, and emergency response services from new workers in the Plan Area such that it would result in the need for, new or physically altered governmental facilities. Impacts to emergency response times from construction traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. Accordingly, there would be no adverse effect.

***CEQA Conclusion*:** The potential for impacts on law enforcement and fire services and facilities is not expected to be significant because the estimated increase in population in the Plan Area associated with construction of the alternative during peak construction would be distributed over multiple cities and counties within the Plan Area. Environmental commitments would be incorporated into the alternative to reduce demand for law enforcement, fire protection, and emergency response services at or near construction sites related to new construction workers in the Plan Area. Construction of Alternative 2B would not require new or physically altered governmental facilities to support the needs of new workers in the Plan Area. These impacts would be considered less than significant. No mitigation is required.

In addition, incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires, and provide for onsite security at construction sites, would minimize potential effects related to the potential for construction-related accidents, and increased demand for public services associated with construction property protection. Environmental commitments would also be incorporated to reduce potential exposure of hazardous materials to the human and natural environment, thereby minimizing the potential demand for fire or emergency services. Construction of Alternative 2B would not require new or physically altered governmental facilities, the construction of which could cause significant environmental effects, to support the needs of new workers in the Plan Area. With implementation of environmental commitments, these impacts would be considered less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of Alternative 2B would have the same potential conflict with the Courtland FPD's Hood Fire Station as would Alternative 1B, possibly requiring replacement of the facility (Figure 20-6). Mitigation Measure UT-2 would be available to lessen the severity of the potential effect by ensuring continuation of fire protection services in the Courtland Fire Protection District service area, by the Courtland Fire Station which also serves the area. Implementation of Mitigation Measure UT-2 would also require the construction of a replacement facility, which could result in adverse environmental effects. Therefore, this effect would be adverse. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and effects would not be adverse.

***CEQA Conclusion*:** Depending on final design of the alignment, the alternative could require relocation of Courtland FPD's Hood Fire Station. While implementation of Mitigation Measure UT-2 would lessen the severity of the impact by ensuring continuation of fire protection services in the Courtland FPD service area, construction of a replacement facility could cause significant environmental effects. Construction of a replacement fire station would require subsequent environmental review under CEQA. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and this impact could be less than significant.

Mitigation Measure UT-2: Ensure the Continuation of Fire Protection Services by the Courtland Fire Protection District

Please see Mitigation Measure UT-2 under Impact UT-2 in the discussion of Alternative 1A.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects on public schools as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1B.

As under Alternative 1B, the majority of construction jobs are expected to be filled by workers from the existing five-county labor force. It is anticipated that there would be no increased demand for public school services from these workers (see Table 20A-4, Appendix 20A). Although some workers who relocate from outside of the Plan Area could have school-age children, resulting in an increase in public school enrollment, these new students would likely be distributed through a number of schools within the Plan Area. This minor increase in population in the Plan Area would not be expected to result in an increase in enrollment numbers sufficient to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. There would not be an adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the five-county labor force. Incremental increase in school-age children of construction personnel moving into the area for specialized construction jobs would likely be distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. The impact is less than significant. No mitigation is required.

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the need for expanded water or wastewater treatment facilities would be similar to those described for Alternative 1B. For the purposes of this analysis, the amount of water supply required under this alternative would be the same as under Alternative 1B. As such, the total potable water supply needed under this alternative is estimated to be 92.2 million gallons (Table 20-3). While water needs would be substantial, these requirements would be temporary and could be met with non-municipal water sources without any new water supply entitlements. Also similar to Alternative 1A, wastewater created as a result of tunnel boring and concrete batching would be treated onsite at isolated RTM storage areas and designated concrete batch plant sites, respectively. Construction of Alternative 2B would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

CEQA Conclusion: While construction of this alternative would require a substantial supply of water, this supply could be met by non-municipal sources. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Construction of Alternative 2B would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact would be less than significant. Mitigation is not required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Potential effects associated with an increased demand for solid waste management providers in the Plan Area and surrounding communities as a result of waste generated from construction of the proposed water conveyance facilities would be similar to those described under Alternative 1B. Minor additional demands may result from construction of an operable barrier. Under Alternative 2B, the total volume of excavated material that would require disposal at a landfill during the construction period (58.25 tons) represents a negligible impact on the 11 solid waste landfills which have a total remaining permitted capacity of over 300 million tons. Of the estimated 376,449 tons of construction debris that would be generated under this alternative, it assumed that 350,097 tons would be divertible, and that at least 50% (or 188,225) of construction waste would be diverted (in accordance with diversion requirements set forth by the State Agency Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Therefore, after consideration of diversion requirements, the volume of construction debris that require disposal at landfills represents a negligible effect on the remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. Construction of Alternative 2B would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There would be no adverse effect.

***CEQA Conclusion*:** Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it would be expected that construction of the

proposed water conveyance facilities would not cause any exceedance of landfill capacity. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 2B would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. Therefore, there would be a less than significant impact on solid waste management facilities. No mitigation is required.

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: The potential for disruption of utilities and relocation of existing utility facilities would be similar to that described under Alternative 1B. The conveyance alignment constructed under this alternative would cross or interfere with approximately 138 miles of agricultural delivery canals and drainage ditches, including approximately 32 miles on Roberts Island, 28 miles on Union Island, 13 miles on New Hope Tract, 11 miles on Terminous Tract, and 10 miles on Rindge Tract. The potential for construction of the proposed conveyance facilities to cause disruptions to agricultural infrastructure in the study area are addressed in Chapter 14, Agricultural Resources. Specifically, Chapter 14 addresses potential conflicts with existing agricultural irrigation and drainage facilities as a result of construction. Other potential differences could result from the construction of an operable barrier at the Head of Old River and the selection of Intakes 6 and 7 instead of 4 and 5, which would partially avoid a conflict with one electrical transmission line. Regardless, regional power transmission lines and natural gas pipelines would require relocation. Additionally, inactive gas wells would need to be plugged and abandoned. The potential damage and disruption to buried and overhead electrical transmission lines would be similar for telecommunications infrastructure. Because relocation and disruption of existing utility infrastructure would be required under this alternative and would have the potential to create effects through the relocation of facilities, this alternative would result in an adverse effect on utilities.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting existing facilities by crossing over or under infrastructure. However, construction of facilities would conflict with existing utility facilities in some locations. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Similar to Alternative 1B, the proposed water conveyance facilities under this alternative would be operated to provide diversions up to a total of 15,000 cfs from the new north Delta intakes. Under Alternative 2B, operation and maintenance of the proposed water conveyance facilities would be similar to that described under Alternative 1B, and would not result in potential effects associated with the need to construct new government facilities as a result of increased need for public services.

Because requirements for water and wastewater treatment under operations and maintenance of the water conveyance facilities would be primarily associated with intakes and intake pumping plant facilities, these effects are similar to those described under Alternative 1B. However, the location of the effects would differ following the construction of an operable barrier at the Head of Old River, and Intakes 6 and 7 instead of 4 and 5. Quantities of water needed for these purposes would be anticipated to be relatively small compared with municipal supplies. Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities.

Similar to Alternative 1B, the operation and maintenance activities associated with the proposed water conveyance facilities are not expected to generate solid waste sufficient to create an increase in demand for solid waste management providers in the Plan Area and surrounding communities.

Operation and maintenance of water conveyance facilities under this alternative would not require improvements to the existing physical power transmission system, as discussed under Impact UT-6. As such, operation and maintenance activities associated with the proposed water conveyance facilities would not be expected to result in the disruption or relocation of utilities. Effects associated with energy demands of operation and maintenance of the proposed water conveyance facilities are addressed in Chapter 21, *Energy*.

Overall, operation and maintenance of the conveyance facilities under Alternative 1B would not result in adverse effects on public service demands, water supply and treatment capacity, wastewater treatment facilities, solid waste facilities, or conflict with local and regional utility lines. There would not be an adverse effect.

***CEQA Conclusion*:** Operation and maintenance activities associated with the proposed water conveyance facilities would not result in a significant impact related to construction of new

government facilities from the increased need for public services, new water and wastewater treatment services, or solid waste management services; or disruption or relocation of utilities. The impact on public services and utilities would be less than significant. No mitigation is required.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Potential effects associated with the need to construct new government facilities to meet an increased need for public services resulting from the implementation of restoration conservation measures and measures designed to reduce the effect of species-level stressors would be similar to those described under Alternative 1B. Potential variations from Alternative 1B 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. Potential effects of implementing conservation components on law enforcement, fire protection, and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. This effect would not be considered adverse with the implementation of environmental commitments to provide 24-hour onsite private security services at construction areas and environmental commitments to minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components, as described in Appendix 3B, *Environmental Commitments*.

Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation components would not result in effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, emergency responders, hospitals, public schools, libraries). Because the location for the implementation of conservation activities is not known at this point, it is not possible to determine whether the construction of conservation components would require demolition and replacement of a government facility.

Effects on municipal water facilities from conservation components would be similar to Alternative 1B with potential variations arising from the selection of different locations for habitat restoration or enhancement. Some activities associated with these measures could require municipal water and wastewater treatment services; however, because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) of these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect would be considered adverse.

Potential effects associated with an increase in demand for solid waste management providers in the Plan Area and surrounding communities from solid waste generated by construction and operation of the proposed conservation components would be similar to those described under Alternative 1B. Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that construction and operation of the proposed conservation components would not cause any exceedance of landfill capacity.

Conservation components including habitat restoration and enhancement would be similar to those described under Alternative 1B. Potential variation would result from selection of different restoration areas based on the physical footprint of water conveyance facilities. Like Alternative 1B, however, the implementation of conservation components could result in utility service disruption or possible damage to underground utilities. Similarly, the long-term conversion of existing utility

corridors to habitat purposes could require the relocation of utility infrastructure, which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

The locations, construction, and operational details for these and other conservation components have not been identified. Adverse effects due to the construction, operation and maintenance activities associated with the conservation components are not expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand. However, there is a potential for the disruption or relocation of utility infrastructure, which has the potential to result in an adverse effect. Further, no substantive adverse effects to solid waste management facilities are anticipated. However, because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) of these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect would be adverse.

***CEQA Conclusion*:** Implementation of the proposed conservation components would not likely require alteration or construction of new government facilities resulting from an increased demand for public services and utilities. Measures to reduce stressors on covered species could result in water supply requirements, but are not expected to require substantial increases in demand for city or county water and wastewater treatment services. Potential impacts of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would be less than significant with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. Construction and operation activities associated with the proposed conservation components would result in a less than significant impact on solid waste management facilities based on the capacity of the landfills in the region and the waste diversion requirements set forth by the State of California. However, the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) for these facilities and programs have not been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less than significant level. Therefore, this would be a significant unavoidable impact.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

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

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the provision of law enforcement, fire protection, and emergency response services as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1C. Increased service demands would be experienced in the communities in which new construction workers relocate and in the areas in which construction would take place. Effects from the presence of new workers in the Plan Area would be anticipated to be marginally greater and extend to an additional location with the potential construction of an operable barrier at the Head of Old River.

As in Alternative 1C, the potential for Alternative 2C to result in an effect on law enforcement, fire protection, and emergency response services because of increased demand from new workers in the Plan Area during construction of the proposed water conveyance facilities is low. The minor increase in population associated with specialized construction jobs in the Plan Area during the construction period would not likely result in an increased demand for law enforcement, fire protection and medical services because the minor increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction. The incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires and provide for on-site security at construction sites, would minimize potential effects related to the potential for construction-related accident and demand for public services associated with construction property protection. Environmental commitments would be incorporated to reduce potential exposure of hazardous materials to the human and natural environment, thereby minimizing the potential related demand for fire or emergency services. Construction of Alternative 2C would not increase the demand on law enforcement, fire protection, and emergency response services from new workers in the Plan Area such that it would result in the need for, new or physically altered governmental facilities. Impacts to emergency response times from construction traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. The effect would not be adverse.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by the five-county labor force, and the minor increase in population associated with construction of specialized jobs (e.g., construction of tunnels) is not likely to result in an increased demand for law enforcement, fire protection, and medical services. There would be a less than significant impact on law enforcement, fire protection, and emergency response services from the increased demand of new workers who relocate to communities in the Plan Area during construction of the proposed water conveyance facilities because the minor increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction. Construction of Alternative 2C would not require new or physically altered governmental facilities to support the needs of new workers in the Plan Area. These impacts would be considered less than significant. No mitigation is required.

In addition, incorporation of environmental commitments that would address construction-related accidents associated with hazardous materials spills, contamination, and fires, and provide for onsite security at construction sites, would minimize potential effects related to increased demand

for public services associated with the potential for construction-related accidents and construction property protection. Environmental commitments would also be incorporated to reduce potential exposure of hazardous materials to the human and natural environment, thereby minimizing the potential demand for fire or emergency services. Construction of Alternative 2C would not require new or physically altered governmental facilities, the construction of which could cause significant environmental effects, to support the needs of new workers in the Plan Area. With implementation of environmental commitments, these impacts would be considered less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: As under Alternative 1C, Alternative 2C construction of the proposed water conveyance facilities would not conflict with a public facility, and therefore, would not require the construction or major alteration of such facilities. This effect would not be adverse.

***CEQA Conclusion*:** Construction of the proposed water conveyance facilities under Alternative 2C would not require the construction or major alteration of such facilities. Therefore, this impact would be less than significant. No mitigation is required.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: As under Alternative 1C, construction of the proposed water conveyance facilities would result in an increase in population of an estimated 5,300 workers within the Plan Area during peak construction (Table 20-2). Because most of the new jobs are expected to be filled by the existing five-county labor force, school-aged children of local construction personnel are already served by existing schools and school districts (see Table 20A-4, Appendix 20A). The incremental increase in school-age children of construction personnel moving into the area for specialized jobs would likely be distributed through a number of schools within the Plan Area. This increase would not be substantial enough to exceed the capacity of any identified school or district, or to warrant construction of a new facility.

Overall, Alternative 2C is not anticipated to result in a substantial increase in population growth or associated demand for public schools in the Plan Area. The minimal increase in new students from construction personnel moving into the Plan Area would not result in an adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the five-county labor force. Any incremental increase in school-age children of construction personnel moving into the area for specialized construction jobs would likely be distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. The impact on public schools would be less than significant. No mitigation is required.

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the need for expanded water or wastewater treatment facilities would be similar to those described for Alternative 1C, but could include minor variations as a result

of the construction of an operable barrier at the Head of Old River. As such, the total potable water supply needed under this alternative is estimated to be 131.5 million gallons (Table 20-3). While water needs would be substantial, these requirements would be temporary and could be met with non-municipal water sources without any new water supply entitlements. Also similar to Alternative 1C, wastewater created as a result of tunnel boring and concrete batching would be treated onsite at isolated RTM storage areas and designated concrete batch plant sites, respectively. Construction of Alternative 2C would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

CEQA Conclusion: While construction of this alternative would require a substantial supply of water, this supply could be met by non-municipal sources. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Construction of Alternative 2C would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact would be less than significant. Mitigation is not required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Potential effects associated with an increased demand for solid waste management providers in the Plan Area and surrounding communities as a result of waste generated from construction of the proposed water conveyance facilities would be similar to those described under Alternative 1C. A minor potential difference could result from the construction of an operable barrier. Overall, the construction waste that could be generated by implementing Alternative 2C would be similar to Alternative 1C, and would not adversely affect capacity of available landfills because it represents a negligible amount of the total remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. Further, at least 50% of construction waste would be diverted (diversion requirements set forth by the State Agency Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 2C would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There would be no adverse effect.

CEQA Conclusion: Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it would be expected that construction of the proposed water conveyance facilities would not cause any exceedance of landfill capacity. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 2C would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities.

Therefore, there would be a less than significant impact on solid waste management facilities. No mitigation is required.

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: The potential for disruption of utilities and relocation of existing utility facilities would be similar to that described under Alternative 1C but would also apply to an additional site at the Head of Old River, where an operable barrier would be constructed. Regional power transmission lines and natural gas pipelines would require relocation. Additionally, inactive gas wells would need to be excavated and capped. The potential damage and disruption to buried and overhead electrical transmission lines would be similar for telecommunications. Because relocation and disruption of existing utility infrastructure would be required under this alternative and would have the potential to create effects through the relocation of facilities, this alternative would result in an adverse effect on utilities.

Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting existing facilities by crossing over or under infrastructure. However, construction of facilities would conflict with existing utility facilities in some locations. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Similar to Alternative 1C, the proposed water conveyance facilities under Alternative 2C would be operated to provide diversions up to a total of 15,000 cfs from the new north Delta intakes. Potential effects associated with operation and maintenance of water conveyance facilities would be similar to those described under Alternative 1C. Therefore, Alternative 2C would not result in physical impacts associated with the provision of new or physically altered government facilities.

Because requirements for water and wastewater treatment under operations and maintenance of the water conveyance facilities would be primarily associated with intakes and intake pumping plant facilities, these effects are similar to those described under Alternative 1C. Minor differences could result from operational and maintenance needs for the operable barrier at the Head of Old River. Quantities of water needed for these purposes would be anticipated to be relatively small compared with municipal supplies. Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities.

Similar to Alternative 1C, the operation and maintenance activities associated with the proposed water conveyance facilities are not expected to generate solid waste sufficient to create an increase in demand for solid waste management providers in the Plan Area and surrounding communities. Therefore, there would be no adverse effect to solid waste management facilities under Alternative 2C.

Operation and maintenance of water conveyance facilities under this alternative would not require improvements to the existing physical power transmission system, as discussed under Impact UT-6. As such, operation and maintenance activities associated with the proposed water conveyance facilities would not be expected to result in the disruption or relocation of utilities. Effects associated with energy demands of operation and maintenance of the proposed water conveyance facilities are addressed in Chapter 21, *Energy*.

Overall, operation and maintenance of the conveyance facilities under Alternative 2C would not result in adverse effects on public service demands, water supply and treatment capacity, wastewater treatment facilities, solid waste facilities, or conflict with local and regional utility lines. There would not be an adverse effect.

***CEQA Conclusion*:** Operation and maintenance activities associated with the proposed water conveyance facilities would not result in a significant impact related to construction of new government facilities from the increased need for public services, new water and wastewater treatment services, or solid waste management services; or disruption or relocation of utilities. The impact on public services and utilities would be less than significant. No mitigation is required.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Potential effects associated with the need to construct new government facilities as a result of increased need for public services due to the implementation of restoration conservation components and those measures designed to reduce the effect of species-level stressors would be similar to those described under Alternative 1C. Potential variation from Alternative 1C 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, including the potential construction of an operable barrier at the Head of Old River. Because the location for the implementation of conservation activities is not known at this point, it is not possible to determine whether the construction of conservation components would require demolition and replacement of a government facility.

Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. Incorporation of an environmental commitment that would provide 24-hour onsite private security at construction sites (Appendix 3B, *Environmental Commitments*) would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection. Incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires would minimize potential effects related to the demand for law enforcement, fire protection, or emergency services (Appendix 3B, *Environmental Commitments*). Accordingly, there would be no adverse effect.

Effects on municipal water facilities from conservation components would be similar to Alternative 1C with potential variations arising from the selection of different locations for habitat restoration or enhancement, including locations related to the potential operable barrier at the Head of Old River. Some activities associated with these measures could require municipal water and wastewater treatment services; however, because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) for these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain.

Potential effects associated with an increase in demand for solid waste management providers in the Plan Area and surrounding communities from solid waste generated by construction and operation of the proposed conservation components would be similar to those described under Alternative 1C. Based upon the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that implementing the proposed conservation components would not cause any exceedance of landfill capacity.

Conservation components including habitat restoration and enhancement would be similar to those described under Alternative 1A. Potential variation would result from selection of different restoration areas based on the physical footprint of water conveyance facilities, including the potential operable barrier at Head of Old River. Similar to Alternative 1A, however, the implementation of conservation components could result in utility service disruption or possible damage to underground utilities. Similarly, the long-term conversion of existing utility corridors to habitat purposes could require the relocation of utility infrastructure, which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

The locations, construction, and operational details for conservation components have not been identified. Adverse effects due to the construction, operation and maintenance activities associated with the conservation components are not expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand. However, there is a potential for the disruption or relocation of utility infrastructure, which has the potential to result in an adverse effect. Further, no substantive adverse effects to solid waste management facilities are anticipated. However, because

the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) for these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect would be adverse.

***CEQA Conclusion*:** Implementation of the proposed conservation components would not likely require alteration or construction of new government facilities due to an increased demand for public services and utilities. Several measures to reduce stressors on covered species could result in water supply requirements, but are not expected to require substantial increases in demand for city or county water and wastewater treatment services. Potential impacts of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would be less than significant with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. Construction and operation activities associated with the proposed conservation components would result in a less than significant impact on solid waste management facilities based on the capacity of the landfills in the region and the waste diversion requirements set forth by the State of California. However, the location and construction or operational details (i.e., water consumption and water sources associated with conservation components) for these facilities and programs have not been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less than significant level. Therefore, this would be a significant unavoidable impact.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

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

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the provision of law enforcement, fire protection, and emergency response services as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1A. Increased service demands would be experienced in the communities in which new construction workers relocate and in the areas in which construction

would take place. Effects on services from the presence of new workers in the Plan Area would be anticipated to be somewhat less than under Alternative 1A because two intake facilities would be constructed, rather than five.

The minor increase in construction workers relocating into the Plan Area for specialized jobs (e.g., tunnel construction) during the construction period of approximately 9 years is not anticipated to result in a substantial increase in demand for law enforcement, fire protection and medical services because the estimated increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction.

Incorporation of an environmental commitment that would provide 24-hour onsite private security at construction sites (Appendix 3B, *Environmental Commitments*) would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection.

Incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires would minimize potential effects related to the demand for law enforcement, fire protection, or emergency services (see Appendix 3B, *Environmental Commitments*). Construction of Alternative 3 would not increase the demand on law enforcement, fire protection, and emergency response services from new workers in the Plan Area such that it would result in the need for, new or physically altered governmental facilities. Impacts to emergency response times from construction traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. Accordingly, there would be no adverse effect.

***CEQA Conclusion*:** The potential for impacts on law enforcement and fire services and facilities is not expected to be significant because the estimated increase in population in the Plan Area associated with construction of the alternative during peak construction would be distributed over multiple cities and counties within the Plan Area. In addition, environmental commitments would be incorporated into the alternative to reduce demand for law enforcement, fire protection, and emergency response services at or near construction sites from new construction workers in the Plan Area, and effects on local law enforcement agencies associated with construction property protection. Construction of Alternative 3 would not require new or physically altered governmental facilities to support the needs of new workers in the Plan Area. This impact would be considered less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 3, construction of the proposed water conveyance facilities would not conflict with a public facility, and therefore, would not require the construction or major alteration of such facilities. This effect would not be adverse.

***CEQA Conclusion*:** Construction of the proposed water conveyance facilities under Alternative 3 would not require the construction or major alteration of such facilities. Therefore, this impact would be less than significant. No mitigation is required.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects on public schools as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1A. However, the construction worker population increase and associated school-age children who would enroll in public schools would be

less because Alternative 3 would only require construction of two intake facilities instead of five. The minor increase in school-age children of construction personnel moving into the area for specialized jobs (e.g., tunnel construction) would likely be distributed through a number of schools within the Plan Area. This increase would not be substantial enough to exceed the capacity of any identified school or district, or to warrant construction of a new facility. There would not be an adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the existing five-county labor force. The minor increase in school-age children of construction personnel moving into the area for specialized construction jobs (e.g., tunnel construction) would likely be distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. The impact on public schools is less than significant. No mitigation is required.

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the need for expanded water or wastewater treatment facilities would be similar to those described for Alternative 1A. Under this alternative, however, concrete batch plants would require a smaller quantity of water for concrete production because only two intake facilities (and associated conveyance pipelines and other structures) would be constructed. Based on the number of major structures associated with this alternative, it is estimated that 13 field offices would be needed, which would use 17 million gallons of water. In addition, 127 million gallons of water would be used for activities associated with concrete batch plants. The total potable water supply needed under this alternative is estimated to be 144 million gallons (Table 20-3). While water supply needs would still be substantial, these requirements would be temporary and could be met with non-municipal water sources without any new water supply entitlements. Also similar to Alternative 1A, wastewater created as a result of tunnel boring and concrete batching would be treated onsite at isolated RTM storage areas and designated concrete batch plant sites, respectively. Construction of Alternative 3 would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

***CEQA Conclusion*:** While construction of this alternative would require a substantial supply of water, this supply could be met by non-municipal sources. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Construction of Alternative 3 would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact would be less than significant. Mitigation is not required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Potential effects associated with an increased demand for solid waste management providers in the Plan Area and surrounding communities as a result of waste generated from construction of the proposed water conveyance facilities would be similar to those under Alternative 1A. However, there would be less solid waste generated as a result of construction because Alternative 3 would only require construction of two intake facilities. Overall, the

construction waste that could be generated by implementing Alternative 3 would not adversely affect capacity of available landfills because it represents a negligible amount of the total remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. Further, at least 50% of construction waste would be diverted (diversion requirements set forth by the State Agency Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 3 would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There would be no adverse effect.

CEQA Conclusion: Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it would be expected that construction of the proposed water conveyance facilities would not cause any exceedance of landfill capacity. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 3 would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. Therefore, there would be a less than significant impact on solid waste management facilities.

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Disruption of utilities and relocation of existing utility facilities under Alternative 3 would be similar to those described for Alternative 1A. Because Alternative 3 would only construct Intakes 1 and 2, this alternative would avoid potential conflicts associated with Intakes 3, 4, and 5. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Relocation of additional facilities near proposed forebays, RTM, and borrow or spoils areas may also be necessary. The potential damage and disruption to buried and overhead electric transmission lines would be similar for telecommunication infrastructure. Because relocation and disruption of existing utility infrastructure would be required under this alternative and would have the potential to create effects through the relocation of facilities, this alternative would result in an adverse effect on utilities.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting existing facilities by crossing over or under infrastructure. However, construction of facilities would conflict with

existing utility facilities in some locations. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: The proposed water conveyance facilities under this alternative would be operated to provide diversions up to a total of 6,000 cfs from two new north Delta intakes, rather than 15,000 cfs from five intakes under Alternative 1A. However, potential effects associated with operation and maintenance of water conveyance facilities would be similar to those described under Alternative 1A. Therefore, Alternative 3 would not result in physical impacts associated with the provision of new or physically altered government facilities.

Because requirements for water and wastewater treatment under operations and maintenance of the water conveyance facilities would be primarily associated with intakes and intake pumping plant facilities, these effects would be similar to but smaller than those described under Alternative 1A because this alternative would build two intake facilities rather than five. Quantities of water needed for these purposes would be anticipated to be relatively small compared with municipal supplies. Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities.

Similar to Alternative 1A, the operation and maintenance activities associated with the proposed water conveyance facilities are not expected to generate solid waste such that there would be an increase in demand for solid waste management providers in the Plan Area and surrounding communities. Because Alternative 3 includes only two intakes (as opposed to five under Alternative 1A), the volume of solids generated from the sediment load within the river would be less than the volume estimates described under Alternative 1A.

Operation and maintenance of water conveyance facilities under this alternative would not require improvements to the existing physical power transmission system, as discussed under Impact UT-6.

As such, operation and maintenance activities associated with the proposed water conveyance facilities would not be expected to result in the disruption or relocation of utilities. Effects associated with energy demands of operation and maintenance of the proposed water conveyance facilities are addressed in Chapter 21, *Energy*.

Overall, operation and maintenance of the conveyance facilities under Alternative 3 would not result in adverse effects on service demands, water capacity, wastewater and solid waste facilities, nor conflict with local and regional utility lines because demand for law enforcement and fire protection services would be temporary over a six-county area, new water and wastewater treatment service would be handled onsite, and adequate solid waste disposal capacity exists to handle construction waste. There would not be an adverse effect.

***CEQA Conclusion*:** Operation and maintenance activities associated with the proposed water conveyance facilities would not result in a significant impact related to construction of new government facilities from the increased need for public services, new water and wastewater treatment services, or solid waste management services; or disruption or relocation of utilities. The impact on public services and utilities would be less than significant. No mitigation is required.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Potential effects associated with the need to construct new government facilities to meet an increased need for public services resulting from the implementation of restoration conservation components and those measures designed to reduce the effect of species-level stressors 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. Because the location for the implementation of conservation activities is not known at this point, it is not possible to determine whether the construction of conservation components would require demolition and replacement of a government facility.

Effects on municipal water facilities from conservation components would be similar to those for Alternative 1A. Some activities associated with these measures could require municipal water and wastewater treatment services; however, because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) of these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain.

Potential effects associated with an increase in demand for solid waste management providers in the Plan Area and surrounding communities from solid waste generated by construction and operation of the proposed conservation components would be similar to those described under Alternative 1A. Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that construction and operation of the proposed conservation components would not cause any exceedance of landfill capacity.

Conservation components including habitat restoration and enhancement would be similar to those under Alternative 1A. The implementation of conservation components could result in utility service disruption or possible damage to underground utilities. Similarly, the long-term conversion of existing utility corridors to habitat purposes could require the relocation of utility infrastructure,

which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. Because of the scale and duration of construction associated with implementing conservation components, there could be an increased demand for public services. This effect would not be considered adverse with the implementation of environmental commitments described in Appendix 3B, *Environmental Commitments*. These environmental commitments have been incorporated into this alternative and would provide for onsite security at construction sites and minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components.

Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation components would not result in potential effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, public schools).

The locations, construction, and operational details for these and other conservation components have not been identified. Adverse effects due to the construction, operation and maintenance activities associated with the conservation components are not expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand. Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would not be adverse with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, there is a potential for the disruption or relocation of utility infrastructure, which has the potential to result in an adverse effect. Further, no substantive adverse effects on solid waste management facilities are anticipated. However, the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) related to these facilities and programs have not yet been developed. Therefore, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect would be adverse.

***CEQA Conclusion*:** Implementation of the proposed conservation components would not likely require alteration or construction of new government facilities due to increased need for public services and utilities. Several measures to reduce stressors on covered species could result in water supply requirements, but are not expected to require substantial increases in demand on municipal water and wastewater treatment services. Construction and operation activities associated with the proposed conservation components would result in a less than significant impact on solid waste management facilities based upon the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California. Potential impacts of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would be less than significant with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, the location and construction and operational details (i.e., water consumption and water

sources associated with conservation components) of these facilities and programs have not yet been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less than significant level. Therefore, this would be a significant unavoidable impact.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

20.3.3.9 Alternative 4—Dual Conveyance with Modified Pipeline/Tunnel and Intakes 2, 3, and 5 (9,000 cfs; Operational Scenario H)

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of the proposed water conveyance facilities under Alternative 4 could affect law enforcement, fire protection, and emergency services and facilities through increased demand for services and direct and indirect effects on nearby facilities. Increased service demands would be experienced in the communities in which new construction workers relocate and in the areas in which construction would take place.

Increased Public Service Demands Associated with Workers Relocating to the Study Area

Although Alternative 4 would not result in a permanent increase in population that could tax the ability to provide adequate law enforcement, fire protection services, and medical services, the increase in construction workers anticipated during the construction period of approximately 9 years could increase demands for these services during this period. An estimated peak of 3,937 workers would be needed during construction of the proposed water conveyance facilities (Table 20-2) (Chapter 16, *Socioeconomics*).

It is anticipated that many of these construction jobs would be filled from the existing labor force in the five-county Plan Area region. However, construction of the conveyance tunnels may require specialized skills resulting in recruitment of specially trained workers coming from outside the five-county region. As described in Chapter 16, *Socioeconomics,* this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million.

Because the construction population would primarily come from the existing five-county labor force which is already served by law enforcement agencies and medical/emergency response services

(hospitals) in the Plan Area (Appendix 20A, Tables 20A-1 to 20A-3), and because the minor increase in demand from the worker population that would move into the area to fill specialized jobs (e.g., tunnel construction) would be spread across the large multi-county study area, construction of the alternative is not anticipated to result in an increased demand on law enforcement, fire protection, or medical services. This effect is not considered adverse.

Increased Public Service Demands Associated with Construction Work Areas and Activities

Constructing the proposed water conveyance facilities could create additional demand for law enforcement, fire protection, or emergency medical services for construction property protection and related to the potential for construction-related accidents associated with hazardous materials spills, contamination, or fires.

The scale and duration of construction required for Alternative 4 could result in increased demand on law enforcement services, especially near major construction sites. As part of the alternative, DWR would implement an environmental commitment (as discussed in Appendix 3B, *Environmental Commitments*) that would provide 24-hour onsite private security at construction sites. Implementation of this environmental commitment would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection.

Construction of this alternative could also result in increased demands for service from law enforcement, fire protection, and emergency service agencies related to possible increases in construction-related accidents, either at job sites or along haul routes, or other incidents involving hazardous materials. DWR would incorporate environmental commitments into this alternative that would minimize the potential for construction-related accidents associated with hazardous materials spills, contamination, or fires. The following environmental commitments would be incorporated into this alternative (Appendix 3B, *Environmental Commitments*):

- A hazardous materials management plan (HMMP) that includes appropriate practices to reduce the likelihood of a spill of toxic chemicals and other hazardous materials during construction and facilities operation and maintenance.
- A SPCC Plan will be developed and implemented to minimize effects from spills of oil or oil-containing products during construction and operation of the project.
- A fire prevention and control plan that will include fire prevention and suppression measures consistent with the policies and standards in the affected jurisdictions and will be in full compliance with Cal-OSHA standards for fire safety and prevention.

Incorporation of these environmental commitments would minimize the potential for construction-related accidents associated with hazardous materials spills, contamination, or fires, and reduce potential effects associated with increased service demands from new construction workers in the Plan Area.

In summary, the potential for Alternative 4 to result in an effect on law enforcement, fire protection, and emergency response services because of increased demand from new workers in the Plan Area during construction of the proposed water conveyance facilities is low. The minor increase in population associated with specialized construction jobs during the construction period would not likely result in an increased demand for law enforcement, fire protection, and medical services because the minor increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction. The incorporation of

environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires, and provide for onsite security at construction sites, would minimize potential effects related to demand for public services associated with construction property protection and the potential for construction-related accidents. Environmental commitments would also be incorporated to reduce potential exposure of hazardous materials to the human and natural environment, thereby minimizing the potential related demand for fire or emergency services. This effect is not considered adverse.

Construction of Alternative 4 would not increase the demand on law enforcement, fire protection, and emergency response services either due to an increased worker population or due to construction-related hazards, such that it would result in substantial adverse physical effects associated with the provision of, or the need for, new or physically altered governmental facilities. Impacts to emergency response times from construction traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. Therefore, the effect would not be adverse.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by the existing five-county labor force, and the minor increase in population associated with specialized construction jobs (e.g., tunnel construction) during the construction period would not likely result in an increased demand for law enforcement, fire protection, and medical services. This is because the minor increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction. There would be a less than significant impact on law enforcement, fire protection, and emergency response services from the increased demand of new workers who relocate to communities in the Plan Area during construction of the proposed water conveyance facilities.

Incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires, and provide for onsite security at construction sites would minimize potential effects related to the potential for construction-related accidents, and increased demand for public services associated with construction property protection. Environmental commitments would also be incorporated to reduce potential exposure of hazardous materials to the human and natural environment, thereby minimizing the potential demand for fire or emergency services.

Construction of Alternative 4 would not require new or physically altered governmental facilities since it would not cause a marked increase in the worker population in the Plan Area, nor would it increase the potential for construction-related hazards. This impact would be less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 4, a proposed 29-foot interior diameter single-bore tunnel would be constructed more than 100 feet below the surface of Hood. It would connect north of Hood to pipelines running from Intake Pumping Plant 2 and 3, and south of Hood to the intermediate forebay. There are no public facilities in the proposed tunnel location. Construction of the tunnel is not anticipated to disturb the surface and would not conflict with any public facilities, nor would it require the construction or major alteration of such facilities. This effect would not be adverse.

***CEQA Conclusion*:** Construction of the proposed water conveyance facilities under Alternative 4 would not require the construction or major alteration of public service facilities. Therefore, this impact would be less than significant. No mitigation is required.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of the proposed water conveyance facilities under Alternative 4 would require an estimated peak of 3,937 workers (Table 20-2), most of whom are expected to come from the existing five-county labor force. However, tunnel construction may require workers with specialized skills not readily available in the local labor pool. It is anticipated that some of the non-local workers would come from outside the five-county region, although this would represent a minor increase in population compared to the total 2020 projected regional population of 4.6 million.

Because most of the BDCP construction jobs would be filled by workers from within the existing five-county labor force, it is anticipated that school-aged children from those families would already have planned to attend schools in school districts within the Plan Area and there would be no increased demand for public school services from these workers (see Table 20A-4, Appendix 20A). While some workers who relocate from outside of the Plan Area could have school-age children, resulting in an increase in public school enrollment, this minor increase in population in the Plan Area would not be expected to result in an increase in enrollment numbers substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. Further, it would be difficult to identify specifically where within the region these new employees would reside. However, Table 20A-4 in Appendix 20A lists the 209 schools that serve the communities within the Plan Area and the current enrollment numbers for each school, which identifies a total enrollment of 148,880 across the Plan Area. The incremental increase in school-age children of construction personnel moving into the area for specialized jobs (e.g., tunnel construction) as a result of construction of Alternative 4 would likely be distributed through a number of schools within the Plan Area. This increase would not be substantial enough to exceed the capacity of any identified school or district, or to warrant construction of a new facility.

Overall, construction of Alternative 4 is not anticipated to result in a substantial increase in demand for public schools in the Plan Area and would not create a need for new or physically altered public schools. There would be no adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the existing five-county labor force. The incremental increase in school-age children of construction personnel moving into the area for specialized construction jobs (e.g., tunnel construction) would likely be distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility or alteration of an existing facility within the Plan Area. The impact is less than significant. No mitigation is required[18].

[18] Under California law, the rules governing what constitutes adequate mitigation for impacts on school facilities is governed by legislation. Pursuant to the operative statutes, impacts to schools, with some exceptions, are sufficiently mitigated, as a matter of law, by the payment of school impact fees by residential developers. (See Cal. Gov. Code, §§ 65995[h], 65996[a].)

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of the proposed water conveyance facilities would require water supply and wastewater treatment services. While general construction activities including dust control and soil compaction would require a supply of water, for purposes of this analysis, the major potable water supply needs would be for the concrete batch plants (see Chapter 3, *Description of Alternatives*) and field offices during construction. Potable water supply needed for construction was calculated based on the amount of concrete required for this alternative and the amount of water required by the field offices. Under this alternative, four concrete batch plants would be constructed onsite for temporary use during construction. Each batch concrete plant would require fresh water for batching, dust control, and washing requirements (including concrete truck washout). The potable water supply estimates also considered the number of field offices needed for each alternative and assumed that each field office would have an average of 10 workers, an average of 40 gallons of water would be consumed per person per day (including drinking, hand washing, and toilet use), and would be operational for 3,285 days (i.e., 9 years at 365 days per year[19]). Table 20-3 presents the estimated potable water supply required for concrete (by each type of facility) and for field offices.

Based on the number of major structures associated with this alternative, it is estimated that 14 field offices would be needed, which would use 18 million gallons of water. In addition, 147 million gallons of water would be used for activities associated with concrete batch plants. The total potable water supply needed under this alternative is estimated to be 165.7 million gallons (Table 20-3). It is anticipated that if there are existing water lines in the vicinity of the construction sites, the field office will connect to them. Because construction of this alternative would primarily occur in rural parts of the study area, and is not likely to occur in areas with municipal water service, it is not expected to impact municipal water systems. If there are no existing water lines in the vicinity, then field offices will require construction of a water tank. Water for construction will be provided by available sources to the extent possible; if needed, water may be brought to the construction sites in water trucks. Construction impacts associated with trucks, including water trucks, are addressed in Chapter 19, *Transportation*, Chapter 22, *Air Quality and Greenhouse Gases*, and Chapter 23, *Noise*. As such, this alternative would not likely adversely affect municipal water supplies. Additionally, the potable water demand would be temporary and limited to the construction period.

Tunnel boring would create a substantial amount of wastewater. This material, part of the RTM, would also include soils, foaming agents, and other materials. This analysis assumes that RTM would undergo treatment in isolated RTM storage areas located throughout the Plan Area (see Figure M3-4 in the Mapbook Volume), and therefore, wastewater related to tunnel boring RTM would not require treatment at wastewater treatment facilities. As part of the alternative, DWR would implement an environmental commitment (as discussed in Appendix 3B, *Environmental Commitments*) that would dispose of and reuse spoils, reusable tunnel material, and dredged material. Concrete batch plants would also create wastewater, which would be treated onsite at designated concrete batch plant sites. Wastewater generated during construction at field offices and temporary construction facilities will be served by temporary portable facilities (e.g., portable toilets). As discussed in Chapter 8, *Water Quality*, as part of the *Environmental Commitments* (Appendix 3B) for each alternative, DWR will be required to conduct project construction activities in compliance with the

[19] This is a conservative estimate, as Chapter 3, *Description of Alternatives*, indicates that most construction activities will occur only 5 days a week (Monday through Friday) up to 24 hours a day.

State Water Board's *NPDES Stormwater General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (Order No. 2009-0009-DWQ/NPDES Permit No. CAS000002). This General Construction NPDES Permit requires the development and implementation of a SWPPP that outlines the temporary construction-related BMPs to prevent and minimize erosion, sedimentation, and discharge of other construction-related contaminants, as well as permanent post-construction BMPs to minimize adverse long-term stormwater related–runoff water quality effects.

Considered across the alternative, potable water supply needs are substantial in volume; however, these requirements would need to be met over a construction period of approximately 9 years, and would be anticipated to be met with non-municipal water sources without any need for new water supply entitlements. Further, wastewater treatment services required for this alternative would be provided by temporary facilities and treated onsite. Construction of Alternative 4 would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

***CEQA Conclusion*:** While construction of Alternative 4 would require 165.7 million gallons of potable water, this supply could be met by non-municipal sources without any new water supply entitlements. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Water for construction activities would be brought to the site in water trucks. Wastewater services for construction crews would be provided by temporary portable facilities. Construction of Alternative 4 would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact would be less than significant. Mitigation is not required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Alternative 4 would only require construction of three intake facilities as opposed to five intakes; however, Alternative 4 would also involve constructing an operable barrier at the Head of Old River, which could create some solid waste. Overall, the construction waste that could be generated by implementing Alternative 4 would not adversely affect capacity of available landfills because it represents a negligible amount of the total remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. Further, at least 50% of construction waste would be diverted (diversion requirements set forth by the State Agency Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 4 would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There would be no adverse effect.

Construction of the proposed water conveyance facilities would generate construction debris and excavated material that would require disposal at a landfill. For purposes of this analysis, an estimate of the total quantity of excavated material to be disposed at a landfill was calculated for each facility of the alternative based on construction cost estimating documents. Construction of

Alternative 4, is estimated to generate 17,846 tons of excavated material. Construction of tunnel segments under this alternative would require disposal of RTM, which is a mix of soils cutting and soil conditioning agents (water, air, bentonite, foaming agents, and/or polymers or biopolymers). As part of the alternative, DWR would implement an environmental commitment (as discussed in Appendix 3B, *Environmental Commitments*) that would dispose of and reuse spoils, RTM, and dredged material. Before RTM can be reused or reintroduced to the environment, it must be managed and treated. Construction of the BDCP alternatives would utilize the controlled storage method; under this approach, soils, RTM, and dredged material would be transported to designated RTM work areas for the temporary storage of these materials. Based on a review of the typical additives in RTM, it is assumed that the RTM can be disposed of onsite; however, to be conservative, an estimated 0.1% of the excavated waste, accounting for any hazardous substances or wastes coming from farming operations or previous land uses, would require disposal at a landfill[20]. Based on these assumptions, up to 17.85 tons (i.e., 0.1% of 17,846 tons) of excavated materials would require disposal at a landfill. Under this alternative, the total volume of excavated material that would require disposal at a landfill during the construction period (17.85 tons) represents a negligible impact on the 11 solid waste landfills, which have a total remaining permitted capacity of over 300 million tons or 440.25 million cubic yards (Appendix 20A).

Construction debris, including debris from structure demolition, power poles, utility lines, piping, and other materials would also be generated as a result of construction of this alternative. For purposes of this analysis, the volume of construction debris generated during construction was based on estimated truck trips that were assumed to be potentially associated with disposal of construction debris at a landfill. This includes all trips by trucks categorized as Heavy Construction T7 that are likely to carry debris (flatbed, dump, and tractor) detailed in Chapter 22, *Air Quality and Greenhouse Gases* (Table 22B-4 of Appendix 22B, *Air Quality Assumptions*). Under this alternative, there would be approximately 21 outbound trips per day, or 47,268 trips over the 9-year construction period[21]. One truck typically holds approximately 20 cubic yards of material. Therefore, an average of 420 cubic yards (302 tons) would be generated per day, totaling 952,552 cubic yards (685,837 tons[22]) of construction debris over the 9-year construction period.

Although it is not known specifically which landfills would be utilized during construction of the proposed water conveyance facilities, disposal of demolition and excavated material would be expected to occur at several different locations depending on the type of material and its origin. It is standard practice that the construction contractors handle and dispose of all hazardous and non-hazardous materials during construction. Of the solid waste facilities in the Plan Area counties, there

[20] The percentage of waste excavation that might need specialized disposal at a landfill site was determined in consultation with the U.S. Department of Energy (DOE) Hazardous Substances Coordinator. For purposes of this analysis, "excavated material" includes dredged spoils for intakes, associated pumping plants, canals, conveyance pipelines, and forebays. This analysis does not take into account RTM since 100% of RTM is assumed to be able to be disposed of on site.

[21] This assumption is based on 1A alignment calculations scaled based on emissions factors detailed in Appendix 22A. As provided in Chapter 22, *Air Quality and Greenhouse Gases*, it is assumed that each truck will make a maximum of 4 roundtrips (or 8 one-way trips). Based on the assumptions detailed in Tables 22B-5 through 22B-8 of Appendix 22B, there would be 24 heavy duty dump trucks associated with construction of Alternative 4 (modified pipeline/tunnel alternative), which would result in a maximum of 47,628 trips potentially associated with the disposal of construction debris at a landfill over the 9-year construction period. Although the truck trips during construction may not all be used for excavated material disposal, this number was used to provide a conservative estimate of the amount of excavated material that would be disposed.

[22] Conversion assumes 1 cubic yard of excavated material is approximately 0.72 ton.

are 30 active facilities that can handle solid waste, including 11 solid waste landfills with a remaining permitted capacity of well over 300 million tons, and 18 large volume transfer/processing facilities (see Appendix 20A, Table 20A-6 for a listing of each facility's name, location, permitted capacity, remaining capacity, maximum permitted daily throughput, and proximity to the statutory Delta). According to the CalRecycle SWIS, the 11 solid waste landfills within the study area have estimated "cease operation" dates[23] ranging from between 2016 and 2082. Of the remaining permitted capacity at area landfills, approximately 70% of the capacity is associated with landfills that are not expected to close for 18 to 70 more years (CalRecycle 2012).

Of the estimated 685,837 tons of construction debris that would be generated under this alternative, a percentage would be diverted from landfills to the maximum extent feasible at the time of demolition. Even before consideration of diversion, the construction debris represents negligible amount of the total remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity.

Based on a 2006 characterization study of construction and demolition waste conducted by the CIWMB (now CalRecycle), Alternative 4 would be considered reasonably equivalent to that study's "Other C&D activities that include construction or demolition materials generated from the building, repair, and/or demolition of roads, bridges and other public infrastructure." Divertible categories of material included recyclable aggregates; recyclable wood; rock, dirt, and sand; recyclable metal; and other recoverable material. All non-divertible materials are categorized as other MSW (California Integrated Waste Management Board 2006:46).

Based on the CalRecycle study, approximately 93% of waste generated by the Other C&D subsector was estimated to be divertible. The 10 most prevalent materials for Other C&D waste are shown in Table 20-4. Nine of the top ten materials for Other C&D waste were considered divertible; only painted/demolition gypsum board was not. The most prominent single material type was large asphalt pavement without re-bar, which accounted for approximately 44% of total waste diverted, whereas all other material types in this waste subsector accounted for less than 10% of other C&D waste (California Integrated Waste Management Board 2006:31).

Table 20-4 identifies some of the types of construction and demolition debris that would be anticipated to be generated as a result of construction of Alternative 4. Demolished concrete could be sent to a concrete recycling facility. Other select materials, such as doors, windows, siding, lumber, timbers, and steel, may also be salvaged and reused. Based on CalRecycle's study, 637,828 tons (i.e., 93% of the 685,837 tons of construction debris) is estimated to be divertible. Diverting over 90% of this waste from landfills would substantially lessen any potential effects to Plan Area solid waste management providers. The materials requiring disposal that are considered non-divertible would be hauled offsite to a suitable landfill depending on the type of material and its origin.

While a 90% diversion rate is not always feasible in every instance, the State Agency Model IWMA (Chapter 764, Statutes of 1999, Strom-Martin) which took effect on January 1, 2000 as part of AB 75, requires that each state agency (including DWR) is mandated to develop and implement an IWMP. The provisions of the IWMA require that all state agencies and large state facilities must divert at

[23] As defined by the California Department of Resources Recycling and Recovery (CalRecycle), for active disposal facilities, the ceased operations date is the estimated date when the facility will reach its permitted capacity. That date is found in or estimated from information in the current permit or permit application for a particular facility, including the approved closure plan for the facility (CalRecycle 2012).

least 50% of their solid waste from disposal facilities on and after January 1, 2004. Another requirement of the law is that each state agency and large facility is to submit an annual report to CalRecycle summarizing its yearly progress in implementing waste diversion programs. All solid waste management activities for the construction and operations and maintenance associated with Alternative 4 would be conducted in accordance with regulations set forth by CalRecycle, and any applicable IWMP developed for affected jurisdictions. Although it is not known which landfills will be utilized during construction of the proposed water conveyance facilities, as construction contractors will handle disposal of demolition and excavated material, it is assumed that at least 50% of waste (342,919 tons) will be diverted in compliance with the provisions of the IWMA. Therefore, after consideration of diversion requirements, the volume of construction debris that requires disposal at landfills (342,919 tons, at most) represents a negligible effect on the remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity.

Overall, the construction waste that could be generated by implementing Alternative 4 would not result in an adverse effect on the capacity of available landfills because 50% or more of construction waste generated by this alternative would be diverted (in accordance with diversion requirements set forth by the State Agency Model IWMA and BMP 13 [Appendix 3B, *Environmental Commitments*]), and the construction debris and excavated material that would require disposal at a landfill could be accommodated by, and would have a negligible effect, on the remaining permitted capacity of Plan Area landfills. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. This effect is not adverse.

CEQA Conclusion: Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it would be expected that construction of the proposed water conveyance facilities would not cause any exceedance of landfill capacity. RTM resulting from construction of tunnel segments would be treated in designated RTM work areas. Debris from structure demolition, power poles, utility lines, piping, and other materials would be diverted from landfills to the maximum extent feasible at the time of demolition. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 4 would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. Therefore, there would be a less than significant impact on solid waste management facilities.

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 4, construction of some elements could disrupt utility services or require relocation of existing facilities. The alternative could result in environmental effects in and around areas temporarily or permanently affected by relocation activities. Alternative 4 would construct Intakes 2, 3, and 5. It would also involve constructing an operable barrier at the Head of Old River, which could potentially introduce additional conflicts.

Due to the nature of underground construction, the exact location of underground utilities cannot be guaranteed based on construction documents but can only be determined by careful probing or hand digging, in compliance with Article 6 of the Cal/OSHA Construction Safety Orders. Underground Service Alert, a service which provides utility location services, is not available until the time of construction. Construction activities for Alternative 4 could result in damage to or interference with existing water, sewer, storm drain, natural gas, oil, electric, and/or communication lines and, in some cases, could require that existing lines be permanently relocated, potentially causing interruptions in service. Numerous utility lines of varying sizes are located along and across the pipeline/tunnel alignment and at the various pumping plants and forebay sites.

This water conveyance alignment, along with its associated physical structures, could interfere with 9 overhead power/electrical transmission lines (Chapter 24, *Hazards and Hazardous Materials*, Figure 24-6), 6 natural gas pipelines (Table 20-5 and Chapter 24, *Hazards and Hazardous Materials*, Figure 24-3), 11 inactive oil and gas wells (Chapter 24, *Hazards and Hazardous Materials*, Figure 24-5), the Mokelumne Aqueduct, and 46 miles of agricultural delivery canals and drainage ditches, including approximately 19 miles on Staten Island, 11 miles on Byron Tract, and 6 miles on Bouldin Island. The potential for construction of the proposed conveyance facilities to cause disruptions to agricultural infrastructure in the study area are addressed in Chapter 14, *Agricultural Resources*. Specifically, Chapter 14 addresses potential conflicts with existing agricultural irrigation and drainage facilities as a result of construction.

Construction of the proposed conveyance facility would involve site grading and similar activities requiring heavy equipment use. These construction activities could result in the unintentional damage to or disruption of underground utilities as a result of trenching, augering, or other ground disturbing activity. Disruption of certain utilities, such as natural gas pipelines, could result in public health hazards (e.g., explosions). Construction could also result in damage to or disruption of overhead utilities when establishing electrical interconnection of this alternative to the electric grid. Temporary transmission lines would extend existing power infrastructure (transmission lines and substations) to construction areas. In some cases, disruption of infrastructure and facility operations would be avoided because BDCP facilities would cross either over or under the existing utilities. For instance, most natural gas pipeline crossings are less than 30 feet below ground surface and the proposed tunnel would be installed more than 100 feet below ground surface. However, construction of certain alternative facilities would require relocation of existing utilities.

Proposed forebays and reusable tunnel material areas would conflict with PG&E 500 kV and 115 kV power transmission lines and with a Western 500 kV transmission line, which cross the expanded Clifton Court Forebay site and would require relocation. Some additional electric distribution lines along roads would require relocation. There are 11 plugged oil or gas wells lie within the permanent conveyance footprint, but since they are inactive they will likely not require relocation. The majority of natural gas pipeline crossings are near the surface (less than 30 feet below grade) and within the tunnel or RTM areas of the proposed alignment. Since the tunnels are located in excess of 100 feet below grade, and RTM areas will not be deeper than topsoil levels, minimal conflicts, if any, are anticipated.

The potential damage and disruption to buried and overhead electric transmission lines would be similar for telecommunication infrastructure. In addition, alternative construction would require use of existing and/or construction of new communications infrastructure for intake pumping plants (Chapter 3, *Description of Alternatives*). A communication system would be required to connect to the existing DWR Delta Field Division Operations and Maintenance Center near Banks

Pumping Plant and the DWR communications headquarters in Sacramento, which would require buried fiber optic conduit installed from the southern end of the new conveyance facility at the expanded Clifton Court Forebay along the inlet canal to Banks pumping plant and the Delta Field Division Operations and Maintenance Center. The conduit route would be adjacent to roads, highways, railroads, utilities, or other easements.

Effects would be more likely to occur if utilities were not carefully surveyed prior to construction, including contact with local utility service providers. Implementation of pre-construction surveys, and then utility avoidance or relocation if necessary, would minimize any potential disruption. Mitigation Measures UT-6a, UT-6b, and UT-6c would require relocation or modification of existing utility systems, including, but not limited to, public and private ditches, pumps, and septic systems, in a manner that does not affect current operational reliability to existing and projected users; coordination of utility relocation and modification with utility providers and local agencies to integrate potential other construction projects and minimize disturbance to the communities; and verification of utility locations through field surveys and services such as Underground Service Alert.

Because relocation and disruption of existing utility infrastructure would be required under this alternative and would have the potential to create effects through the relocation of facilities, this would be an adverse effect.

Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting existing facilities by crossing over or under infrastructure. However, construction of facilities would conflict with existing utility facilities in some locations. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant.

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

Before beginning construction, the BDCP proponents will confirm utility/infrastructure locations through consultation with utility service providers, preconstruction field surveys, and services such as Underground Service Alert. The BDCP proponents will find the exact location of underground utilities by safe and acceptable means, including use of hand and modern techniques as well as customary types of equipment. Information regarding the size, color, and location of existing utilities must be confirmed before construction activities begin. The BDCP proponents will confirm the specific location of all high priority utilities (i.e., pipelines carrying petroleum products, oxygen, chlorine, toxic or flammable gases; natural gas in pipelines greater than 6 inches in diameter, or with normal operating measures, greater than 60 pounds per square inch gauge; and underground electric supply lines, conductors, or cables that have a

potential to ground more than 300 volts that do not have effectively grounded sheaths) and such locations will be highlighted on all construction drawings.

In the contract specifications, the BDCP proponents will require that the contractor provide weekly updates on planned excavation for the upcoming week and identify when construction will occur near a high priority utility. On days when this work will occur, the BDCP proponents' construction managers will attend tailgate meetings with contractor staff to review all measures—those identified in the Mitigation Monitoring and Reporting Program and in the construction specifications—regarding such excavations. The contractor's designated health and safety officer will specify a safe distance to work near high-pressure gas lines, and excavation closer to the pipeline will not be authorized until the designated health and safety officer confirms and documents in the construction records that: (1) the line was appropriately located in the field by the utility owner using as-built drawings and a pipeline-locating device, and (2) the location was verified by hand by the construction contractor. The designated health and safety officer will provide written confirmation to the BDCP proponents that the line has been adequately located, and excavation will not start until this confirmation has been received by the BDCP proponents.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

In places where utility lines would be relocated, existing corridors will be utilized to the greatest extent possible, in the following order of priority: (1) existing utility corridors; (2) highway and railroad corridors; (3) recreation trails, with limitations; and (4) new corridors.

New poles or towers will be erected and cable-pulled prior to being connected to existing systems. Natural gas pipeline relocation will be constructed by one of several methods including cut-and-cover, trenching, or placement on at-grade saddles. Active natural gas wells in the proposed water conveyance facilities area will be abandoned to a depth below the tunnel.

Decisions regarding agricultural irrigation and drainage ditches will be made based on site-specific conditions. Planned measures may include one or more of the following.

- New or modified irrigation pumping plants.
- Extended delivery pipes.
- New or modified drainage ditches.
- New or modified drainage pumping plants.

Any utility relocation will be coordinated with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities. BDCP proponents will notify the public in advance of any relocation that is anticipated to disrupt utility service. The BDCP proponents will contact utility owners if construction causes any damage and promptly reconnect disconnected cables and lines with approval of the owners.

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

While any excavation is open, the BDCP proponents will protect, support, or remove underground utilities as necessary to safeguard employees. The BDCP proponents will notify local fire departments if a gas utility is damaged causing a leak or suspected leak, or if damage to a utility results in a threat to public safety.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects:

Public Services

Operation and maintenance activities would require minimal labor. The proposed water conveyance facilities under this alternative would be operated to provide diversions up to a total of 9,000 cfs from three new north Delta intakes.

For the purposes of this analysis, it was estimated that weekly operations and maintenance would require approximately 190 workers (Table 20-2), including maintenance crew, management, repair crew, pumping plant crew, and dewatering crew. These activities would take place along the entire alternative alignment. Given the limited number of workers involved and the large number of work sites, it is not anticipated that routine operations and maintenance activities or major inspections would result in substantial demand for law enforcement, fire protection, or emergency response services. In addition, operation and maintenance would not place service demand on public schools or libraries. The operation and maintenance of the proposed water conveyance facilities would not result in the need for new or physically altered government facilities as a result of increased need for public services.

Utilities

Water and Wastewater

Operation and maintenance of Alternative 4 facilities would involve use of water for pressure washing intake screen panels and basic cleaning of building facilities and other equipment. Additionally, pumping plants would include permanent restroom facilities, which would be equipped with a sanitary gravity drainage leading to a wastewater holding tank. A potable water system would provide water to pumping plant welfare facilities and, if required, safety showers. This supply would be taken from the nearest clean water conveyance system, if available. If not available, pumping plants would be designed to include a self-contained water filtration and treatment system. Raw water downstream would be evaluated for potential use in a non-potable system serving hose faucets and water-cooled condensing units for plant equipment. Small amounts of additional services may result from the operation and maintenance of an operable barrier. Quantities of water needed for these purposes would be anticipated to be relatively small compared with municipal supplies. Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities. The operation and maintenance of the proposed water conveyance facilities would not result in the need for new water supply entitlements, or require construction of new water or wastewater treatment facilities or expansion of existing facilities.

Solid Waste

The operation and maintenance of the proposed water conveyance facilities under Alternative 4 would not be expected to generate solid waste such that there would be an increase in demand for solid waste management providers in the Plan Area and surrounding communities. Operation and maintenance of the proposed water conveyance facilities would involve a sedimentation basin that would be constructed between the intake structure and the pumping plant to collect sediment load from the river. Although the intake fish screens would remove debris and sediment from the intake inflow, a sedimentation basin would be constructed to remove the suspended solids that pass through the screen.

The volume of solids generated on a daily basis would depend on the volume of water pumped through the intakes, as well as the sediment load of the river. Based on a worst-case scenario, considering the throughput of the intakes at a maximum flow of 3,000 cfs, an estimated 82,200 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 up to 253,000 dry pounds per day. The annual volume of solids is anticipated to be approximately 291,600 cubic feet (dry solids).

As designed, it is anticipated that a portion of the solids would be stored and reused at alternative facilities and some portion would be transported for offsite disposal. Additionally, maintenance activities related to the operable barrier could involve the removal of additional sediments. Solids from sediment load would not exceed the permitted capacity or adversely impact the lifespan of area landfills.

Electricity and Natural Gas

Operation and maintenance of water conveyance facilities under this alternative would require new permanent transmission lines for intakes, pumping plants, operable barriers, boat locks, and gate control structures throughout the various proposed conveyance alignments and construction of project facilities. Electrical power to operate the new north Delta pumping plant facilities would be delivered through new transmission lines that would connect to the existing grid in the northern section of the conveyance alignment. 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 on Glannvale Tract, and one segment would run north to connect to a substation, where 69 kV lines would connect to the intake pumping plants, as shown in Figure 3-25. Three utility grids could supply power to the BDCP conveyance facilities: PG&E (under the control of the California Independent System Operator), Sacramento Municipal Utility District (SMUD), and the Western Area Power Administration (WAPA). The electrical power needed for the conveyance facilities would be procured in time to support construction and operation of the facilities.

Construction of permanent transmission lines would not require improvements to the existing physical power transmission system. As such, operation and maintenance activities associated with the proposed water conveyance facilities would not be expected to result in the disruption or relocation of utilities. Effects associated with energy demands of operation and maintenance of the proposed water conveyance facilities are addressed in Chapter 21, *Energy*.

Overall, operation and maintenance of the conveyance facilities under Alternative 4 would not result in adverse effects on service demands, water capacity, wastewater and solid waste facilities nor

conflict with local and regional utility lines because demand for law enforcement and fire protection services would be temporary over a six-county area, new water and wastewater treatment service would be handled onsite, and adequate solid waste disposal capacity exists to handle construction waste. There would not be an adverse effect.

***CEQA Conclusion*:** Operation and maintenance activities associated with the proposed water conveyance facilities would not result in the need for the provision of, or the need for, new or physically altered government facilities from the increased need for public services; construction of new water and wastewater treatment facilities or generate a need for new water supply entitlements; generate solid waste in excess of permitted landfill capacity; or result in the disruption or relocation of utilities. The impact on public services and utilities would be less than significant. No mitigation is required.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Alternative 4 would restore up to 83,900 acres under conservation components to restore tidal habitat, seasonally inundated floodplain, grassland communities, vernal pool complex habitat, and nontidal marsh areas. Additionally, 20 linear miles of channel margin habitat would be enhanced. While locations of conservation components have not been selected, implementation of conservation components for habitat restoration and channel margin habitat enhancement would occur within the ROAs described in Chapter 3, *Description of Alternatives*.

Public Services

Potential effects of implementing conservation components on law enforcement, fire protection, and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. Because of the scale and duration of construction associated with implementing conservation components, there could be an increased demand for these public services. This effect would not be considered adverse with the implementation of environmental commitments to provide onsite private security services at construction areas and environmental commitments that would minimize the potential for construction-related accidents associated with hazardous materials spills, contamination, or fires, as described in Appendix 3B, *Environmental Commitments*. These environmental commitments would be incorporated into this alternative and would provide for onsite security at construction sites and minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation components would not result in effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, emergency responders, hospitals, public schools, libraries). Because the location for the implementation of conservation activities is not known at this point, it is not possible to determine whether the construction of conservation components would require demolition and replacement of a government facility.

Utilities

Water and Wastewater

Implementation of some of the conservation components, in particular those involved with restoration and enhancement of some habitat types, could require a water supply, but would not require city or county treated water sources. Conservation components that could increase need for water supply are restoration of tidal, seasonally inundated floodplain, channel margin, riparian, grassland, vernal pool complex, and nontidal marsh habitats; and maintenance of these habitats as well as alkali seasonal wetland complex, and managed wetlands habitats. Additionally, measures related to the reduction of stressors on covered species would not generally require a treated water supply or generate wastewater. Exceptions to this would potentially include the establishment of a new fish hatchery, expansion of facilities to support dissolved oxygen levels in the Stockton Deep Water Ship Channel, and activities to reduce the risk of invasive species introduction on recreational vessels. For example, boat cleaning stations proposed under the Recreational Users Invasive Species Program (CM20) would potentially draw substantial amounts of water from city or county treated water supplies. Because the location and construction or operational details (i.e., water consumption and water sources associated with conservation components of these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain.

Solid Waste

Implementation of some of the conservation components would result in construction debris and green waste. Implementation of habitat restoration and enhancement proposed under CM4–CM11 would involve restoration, enhancement, and management of various types of habitat. Construction activities could require clearing and grubbing, demolition of existing structures (e.g., roads and utilities), surface water quality protection, dust control, establishment of storage and stockpile areas, temporary utilities and fuel storage, and erosion control. The estimated tonnage of construction debris and solid waste that would be generated from construction associated with the proposed conservation components is unknown. However, there is a remaining landfill capacity of over 300 million tons in nearby landfills (Appendix 20A, Table 20A-6). The disposal of construction debris and excavated material would occur at several different locations depending on the type of material and its origin. Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that construction and operation of the proposed conservation components would not cause any exceedance of landfill capacity.

Electricity and Natural Gas

Conservation components including habitat restoration and enhancement would, in some cases, involve substantial earthwork and ground disturbance. As discussed above under Impact UT-6, construction could potentially disrupt utility services, and ground disturbance has potential to damage underground utilities. The long-term conversion of existing utility corridors to habitat purposes could require the relocation of utility infrastructure, which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

Alternative 4 would restore, enhance, and protect thousands of acres of habitat, including the restoration of up to 65,000 acres of tidal habitat. The locations, construction, and operational details for these and other conservation components have not been identified. Adverse effects due to the

construction, operation and maintenance activities associated with the conservation components are not expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand. Environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, there is a potential for the disruption or relocation of utility infrastructure, which has the potential to result in an adverse effect. Further, no substantive adverse effects to solid waste management facilities are anticipated. Because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) related to these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain. This effect would be adverse.

***CEQA Conclusion*:** Implementation of the proposed conservation components would not likely require alteration or construction of new government facilities due to increased need for public services and utilities. Several measures to reduce stressors on covered species could result in water supply requirements, but are not expected to require substantial increases in demand on municipal water and wastewater treatment services. Construction and operation activities associated with the proposed conservation components would result in a less than significant impact on solid waste management facilities based upon the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California. Potential impacts of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would be less than significant with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) of these facilities and programs have not yet been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less than significant level. Therefore, this would be a significant unavoidable impact.

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

Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 4.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 4.

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 4.

20.3.3.10 Alternative 5—Dual Conveyance with Pipeline/Tunnel and Intake 1 (3,000 cfs; Operational Scenario C)

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the provision of law enforcement, fire protection, and emergency response services as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1A. Increased service demands would be experienced in the communities in which new construction workers relocate and in the areas in which construction would take place. However, effects on services from the presence of new workers in the Plan Area would be anticipated to be somewhat less than under Alternative 1A because one intake facility would be constructed rather than five.

The minor increase in construction workers relocating into the Plan Area for specialized jobs (e.g., tunnel construction) during the construction period of approximately 9 years is not anticipated to result in a substantial increase in demand for law enforcement, fire protection and medical services because the estimated increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction.

Incorporation of an environmental commitment that would provide 24-hour onsite private security at construction sites (Appendix 3B, *Environmental Commitments*) would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection.

Incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires, would minimize potential effects related to the demand for law enforcement, fire protection, or emergency services (see Appendix 3B, *Environmental Commitments*). Construction of Alternative 5 would not increase the demand on law enforcement, fire protection, and emergency response services from new workers in the Plan Area such that it would result in the need for, new or physically altered governmental facilities. Impacts to emergency response times from construction traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. Accordingly, there would be no adverse effect.

***CEQA Conclusion*:** The potential for impacts on law enforcement and fire services and facilities is not expected to be significant because the estimated increase in population in the Plan Area associated with construction of the alternative during peak construction would be distributed over multiple cities and counties within the Plan Area. In addition, environmental commitments would be incorporated into the alternative to reduce demand for law enforcement, fire protection, and emergency response services at or near construction sites from new construction workers in the Plan Area, and effects on local law enforcement agencies associated with construction property protection. Construction of Alternative 5 would not require new or physically altered governmental facilities to support the needs of new workers in the Plan Area. These impacts would be considered less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 5, construction of the proposed water conveyance facilities would not conflict with a public facility, and therefore, would not require the construction or major alteration of such facilities. This effect would not be adverse.

***CEQA Conclusion*:** Construction of the proposed water conveyance facilities under Alternative 5 would not require the construction or major alteration of such facilities. Therefore, this impact would be less than significant. No mitigation is required.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects on public schools as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1A. However, the construction worker population increase and associated school-age children who would enroll in public schools would be less because Alternative 5 would only require construction of one intake facility instead of five. The minor increase in school-age children of construction personnel moving into the area for specialized jobs (e.g., tunnel construction) would likely be distributed through a number of schools within the Plan Area. This increase would not be substantial enough to exceed the capacity of any identified school or district, or to warrant construction of a new facility. There would not be an adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the existing five-county labor force. The minor increase in school-age children of construction personnel moving into the area for specialized construction jobs (e.g., tunnel construction) would likely be distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. The impact on public schools is less than significant. No mitigation is required.

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the need for expanded water or wastewater treatment facilities would be similar to those for Alternative 1A. Under this alternative, however, concrete batch plants would require a smaller quantity of water for concrete production because only one intake facility (and the associated conveyance pipelines and other structures) would be constructed. Based on the number of major structures associated with this alternative, it is estimated that 12 field offices would be needed, which would use 15 million gallons of water. In addition, 54 million gallons of water would be used for activities associated with concrete batch plants. The total potable water supply needed under this alternative is estimated to be 70 million gallons (Table 20-3). While water supply needs would still be substantial, these requirements would be temporary and could be met with non-municipal water sources without any new water supply entitlements. Also similar to Alternative 1A, wastewater created as a result of tunnel boring and concrete batching would be treated onsite at isolated RTM storage areas and designated concrete batch plant sites, respectively. Construction of Alternative 5 would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

***CEQA Conclusion*:** While construction of this alternative would require a substantial supply of water, this supply could be met by non-municipal sources. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Construction of Alternative 5 would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact would be considered less than significant. Mitigation is not required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Potential effects associated with an increased demand for solid waste management providers in the Plan Area and surrounding communities as a result of waste generated from construction of the proposed water conveyance facilities would be similar to those described under Alternative 1A. However, there would be less solid waste generated as a result of construction because Alternative 5 would only require construction of one intake facility. Overall, the construction waste that could be generated by implementing Alternative 5 would not adversely affect capacity of available landfills because it represents a negligible amount of the total remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. Further, at least 50% of construction waste would be diverted (diversion requirements set forth by the State Agency Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 5 would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There would be no adverse effect.

CEQA Conclusion: Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it would be expected that construction of the proposed water conveyance facilities would not cause any exceedance of landfill capacity. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 5 would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. Therefore, there would be a less than significant impact on solid waste management facilities. No mitigation is required.

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Disruption of utilities and relocation of existing utility facilities under Alternative 5 would be similar to those described for Alternative 1A. However, because Alternative 5 would only construct Intake 1, implementing it would avoid potential conflicts associated with Intakes 2, 3, 4, 5.

The conveyance alignment constructed under this alternative would cross or interfere with approximately 37 miles of agricultural delivery canals and drainage ditches, including approximately 7 miles on Victoria Island, 5 miles on Bacon Island, 4 miles on Byron Tract, and 4 miles on Tyler Island. The potential for construction of the proposed conveyance facilities to cause disruptions to agricultural infrastructure in the study area are addressed in Chapter 14, Agricultural Resources. Specifically, Chapter 14 addresses potential conflicts with existing agricultural irrigation and drainage facilities as a result of construction. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Relocation of additional facilities near proposed forebays, RTM, and borrow or spoils areas may also be necessary. The potential damage and disruption to buried and overhead electric transmission lines would be similar for telecommunication infrastructure. Because relocation and disruption of existing utility infrastructure would be required under this alternative and would have the potential to create effects through the relocation of facilities, this alternative would result in an adverse effect on utilities.

Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting existing facilities by crossing over or under infrastructure. However, construction of facilities would conflict with existing utility facilities in some locations. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: The proposed water conveyance facilities under this alternative would be operated to provide diversions up to a total of 3,000 cfs from one new north Delta intakes, rather than 15,000 cfs

from five intakes under Alternative 1A. However, potential effects associated with operation and maintenance of water conveyance facilities would be similar to those described under Alternative 1A. Therefore, Alternative 5 would not result in physical impacts associated with the provision of new or physically altered government facilities.

Because requirements for water and wastewater treatment under operations and maintenance of the water conveyance facilities would be primarily associated with intakes and intake pumping plant facilities, these effects would be similar to but smaller than those described under Alternative 1A because this alternative would build one intake facility rather than five. Quantities of water needed for these purposes would be anticipated to be relatively small compared with municipal supplies. Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities.

Similar to Alternative 1A, the operation and maintenance activities associated with the proposed water conveyance facilities are not expected to generate solid waste such that there would be an increase in demand for solid waste management providers in the Plan Area and surrounding communities. Because Alternative 5 includes only one intake (as opposed to five under Alternative 1A), the volume of solids generated from the sediment load within the river would be substantially less than the estimated volume under Alternative 1A.

Operation and maintenance of water conveyance facilities under this alternative would not require improvements to the existing physical power transmission system, as discussed under Impact UT-6. As such, operation and maintenance activities associated with the proposed water conveyance facilities would not be expected to result in the disruption or relocation of utilities. Effects associated with energy demands of operation and maintenance of the proposed water facilities are addressed in Chapter 21, *Energy*.

Overall, operation and maintenance of the conveyance facilities under Alternative 5 would not result in adverse effects on service demands, water capacity, wastewater and solid waste facilities or conflict with local and regional utility lines because demand for law enforcement and fire protection services would be temporary over a six-county area, new water and wastewater treatment service would be handled onsite, and adequate solid waste disposal capacity exists to handle construction waste. There would not be an adverse effect.

***CEQA Conclusion*:** Operation and maintenance activities associated with the proposed water conveyance facilities would not result in a significant impact related to construction of new government facilities from the increased need for public services, new water and wastewater treatment services, or solid waste management services; or disruption or relocation of utilities. The impact on public services and utilities would be less than significant. No mitigation is required.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Potential effects associated with the need to construct new government facilities to meet an increased need for public services resulting from implementation of restoration conservation components and those measures designed to reduce the effect of species-level stressors would be similar to those described under Alternative 1A. However, under this Alternative, only 25,000 acres of tidal habitat would be restored, as compared with 65,000 under Alternative 1A. Thus, implementation of tidal habitat restoration would have less potential to result

in demolition and replacement of a public facility than under Alternative 1A; however, potential effects are unknown at this time.

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. Because the location for the implementation of conservation activities is not known at this point, it is not possible to determine whether the construction of conservation components would require demolition and replacement of a government facility.

Effects on municipal water facilities from conservation components would be similar to those for Alternative 1A but service demands related to tidal restoration areas would be smaller, based on a target of 25,000 restored acres over the life of the project, compared with 65,000 acres for Alternative 1A. Some activities associated with this and other measures could require municipal water and wastewater treatment services; however, because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) of these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain.

Potential effects associated with an increase in demand for solid waste management providers in the Plan Area and surrounding communities from solid waste generated by construction and operation of the proposed conservation components would be similar to those described under Alternative 1A. Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that construction and operation of the proposed conservation components would not cause any exceedance of landfill capacity.

Conservation components including habitat restoration and enhancement would be similar to those described under Alternative 1A; however, under Alternative 5, tidal habitat restoration would be limited to 25,000 acres. The implementation of conservation components could nonetheless result in utility service disruption or possible damage to underground utilities. Similarly, the long-term conversion of existing utility corridors to habitat purposes could require the relocation of utility infrastructure, which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. Because of the scale and duration of construction associated with implementing conservation components, there could be an increased demand for public services. This effect would not be considered adverse with the implementation of environmental commitments described in Appendix 3B, *Environmental Commitments*. These environmental commitments have been incorporated into this alternative and would provide for onsite security at construction sites and minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components.

Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation components would not result in potential effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, public schools).

The locations, construction, and operational details for these and other conservation components have not been identified. Adverse effects due to the construction, operation and maintenance activities associated with the conservation components are not expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand. Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would not be adverse with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, there is a potential for the disruption or relocation of utility infrastructure, which has the potential to result in an adverse effect. Further, no substantive adverse effects to solid waste management facilities are anticipated. Because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) related to these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect would be adverse.

***CEQA Conclusion*:** Implementation of the proposed conservation components would not likely require alteration or construction of new government facilities due to increased need for public services and utilities. Several measures to reduce stressors on covered species could result in water supply requirements, but are not expected to require substantial increases in demand on municipal water and wastewater treatment services. Construction and operation activities associated with the proposed conservation components would result in a less than significant impact on solid waste management facilities based upon the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California. Potential impacts of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would be less than significant with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) of these facilities and programs have not yet been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less than significant level. Therefore, this would be a significant unavoidable impact.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

20.3.3.11 Alternative 6A—Isolated Conveyance with Pipeline/Tunnel and Intakes 1-5 (15,000 cfs; Operational Scenario D)

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the provision of law enforcement, fire protection, and emergency response services as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1A. Increased service demands would be experienced in the communities in which new construction workers relocate and in the areas in which construction would take place.

The minor increase in construction workers relocating into the Plan Area for specialized jobs (e.g., tunnel construction) during the construction period of approximately 9 years is not anticipated to result in a substantial increase in demand for law enforcement, fire protection and medical services because the estimated increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction.

Similarly, the scale and duration of construction required for Alternative 6A could result in increased demand on law enforcement services, especially near major construction sites. Incorporation of an environmental commitment that would provide 24-hour onsite private security at construction sites (Appendix 3B, *Environmental Commitments*) would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection.

Incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires would minimize potential effects related to the demand for law enforcement, fire protection, or emergency services (see Appendix 3B, *Environmental Commitments*). Construction of Alternative 6A would not increase the demand on law enforcement, fire protection, and emergency response services from new workers in the Plan Area such that it would result in the need for, new or physically altered governmental facilities. Impacts to emergency response times from construction traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. Accordingly, there would be no adverse effect.

***CEQA Conclusion*:** The potential for impacts on law enforcement and fire services and facilities is not expected to be significant because the estimated increase in population in the Plan Area associated with construction of the alternative during peak construction would be distributed over multiple cities and counties within the Plan Area. In addition, environmental commitments would be incorporated into the alternative to reduce effects related to demand for law enforcement, fire protection, and emergency response services at or near construction sites from new construction workers in the Plan Area, and effects on local law enforcement agencies associated with construction property protection. Construction of Alternative 6A would not require new or physically altered governmental facilities to support the needs of new workers in the Plan Area. These impacts would be considered less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of Alternative 6A would have the same potential conflict with the Courtland FPD's Hood Fire Station as under Alternative 1A, possibly requiring replacement of the

facility (Figure 20-5). Relocation of the fire station could result in environmental effects associated with construction of a replacement facility. Implementation of Mitigation Measure UT-2 would also require the construction of a replacement facility, which could result in adverse environmental effects. Therefore, this effect would be adverse. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and effects would not be adverse.

***CEQA Conclusion*:** Depending on final design of the alignment, the alternative could require relocation of Courtland FPD's Hood Fire Station. While implementation of Mitigation Measure UT-2 would lessen the severity of the impact by ensuring continuation of fire protection services in the Courtland FPD service area, construction of a replacement facility could cause significant environmental effects. Construction of a replacement fire station would require subsequent environmental review under CEQA. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and this impact could be less than significant.

Mitigation Measure UT-2: Ensure the Continuation of Fire Protection Services by the Courtland Fire Protection District

Please see Mitigation Measure UT-2 under Impact UT-2 in the discussion of Alternative 1A.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects on public schools as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1A. The minor increase in school-age children of construction personnel moving into the area for specialized jobs (e.g., tunnel construction) would likely be distributed through a number of schools within the Plan Area. This increase would not be substantial enough to exceed the capacity of any identified school or district, or to warrant construction of a new facility. There would not be an adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the existing five-county labor force. The minor increase in school-age children of construction personnel moving into the area for specialized construction jobs (e.g., tunnel construction) would likely be distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. The impact on public schools is less than significant. No mitigation is required.

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the need for expanded water or wastewater treatment facilities would be similar to those for Alternative 1A. While water needs are substantial, these requirements would be temporary and could be met with non-municipal water sources without any new water supply entitlements. Also similar to Alternative 1A, wastewater created as a result of tunnel boring and concrete batching would be treated onsite at isolated RTM storage areas and designated concrete batch plant sites, respectively. Construction of Alternative 6A would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

***CEQA Conclusion*:** While construction of this alternative would require a substantial supply of water, this supply could be met by non-municipal sources. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Construction of Alternative 6A would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact would be less than significant. Mitigation is not required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Potential effects associated with an increased demand for solid waste management providers in the Plan Area and surrounding communities as a result of waste generated from construction of the proposed water conveyance facilities would be similar to those described under Alternative 1A. Under Alternative 6A, the total volume of excavated material that would require disposal at a landfill during the construction period (17.85 tons) represents a negligible impact on the 11 solid waste landfills which have a total remaining permitted capacity of over 300 million tons. Of the estimated 603,469 tons of construction debris that would be generated under this alternative, it assumed that 561,226 tons would be divertible, and that at least 50% (or 301,734 tons) of construction waste would be diverted (in accordance with diversion requirements set forth by the State Agency Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Therefore, after consideration of diversion requirements, the volume of construction debris that require disposal at landfills represents a negligible effect on the remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. Construction of Alternative 6A would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There would be no adverse effect.

CEQA Conclusion: Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it would be expected that construction of the proposed water conveyance facilities would not cause any exceedance of landfill capacity. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 6A would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. Therefore, there would be a less than significant impact on solid waste management facilities. No mitigation is required.

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Disruption of utilities and relocation of existing utility facilities under Alternative 6A would be similar to those described for Alternative 1A. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Relocation of additional facilities near proposed forebays, RTM, and borrow or spoils areas may also be necessary. The potential damage and disruption to buried and overhead electrical transmission lines would be similar for telecommunications. Because relocation and disruption of existing utility infrastructure would be required under this alternative and would have the potential to create effects through the relocation of facilities, this alternative would result in an adverse effect on utilities.

Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting existing facilities by crossing over or under infrastructure. However, construction of facilities would conflict with existing utility facilities in some locations. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Similar to Alternative 1A, the proposed water conveyance facilities under this alternative would be operated to provide diversions up to a total of 15,000 cfs from five new north Delta intakes. Potential effects associated with operation and maintenance of water conveyance facilities would be similar to those described under Alternative 1A. Therefore, Alternative 6A would

not result in physical impacts associated with the provision of new or physically altered government facilities.

Because requirements for water and wastewater treatment under operations and maintenance of the water conveyance facilities would be primarily associated with intakes and intake pumping plant facilities, these effects are similar to those described under Alternative 1A. Operational differences involving increased diversion quantities from north Delta intakes could require more frequent maintenance activities under this alternative. However, quantities of water needed for these purposes would still be anticipated to be relatively small compared with municipal supplies. Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities.

Similar to Alternative 1A, the operation and maintenance activities associated with the proposed water conveyance facilities are not expected to generate solid waste such that there would be an increase in demand for solid waste management providers in the Plan Area and surrounding communities.

Operation and maintenance of water conveyance facilities under this alternative would not require improvements to the existing physical power transmission system, as discussed under Impact UT-6. As such, operation and maintenance activities associated with the proposed water conveyance facilities would not be expected to result in the disruption or relocation of utilities. Effects associated with energy demands of operation and maintenance of the proposed water conveyance facilities are addressed in Chapter 21, *Energy*.

Overall, operation and maintenance of the conveyance facilities under Alternative 6A would not result in adverse effects on service demands, water capacity, wastewater and solid waste facilities or conflict with local and regional utility lines because demand for law enforcement and fire protection services would be temporary over a six-county area, new water and wastewater treatment service would be handled onsite, and adequate solid waste disposal capacity exists to handle construction waste. There would not be an adverse effect.

***CEQA Conclusion*:** Operation and maintenance activities associated with the proposed water conveyance facilities would not result in a significant impact related to construction of new government facilities from the increased need for public services, new water and wastewater treatment services, or solid waste management services; or disruption or relocation of utilities. The impact on public services and utilities would be less than significant. No mitigation is required.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Potential effects associated with the need to construct new government facilities to meet an increased need for public services resulting from the implementation of restoration conservation components and measures designed to reduce the effect of species-level stressors would be similar to those 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. Because the location for the implementation of conservation activities is not known at this point, it is not possible to determine whether the construction of conservation components would require demolition and replacement of a government facility.

Effects on municipal water facilities from conservation components would be similar to those for Alternative 1A. Some activities associated with these measures could require municipal water and wastewater treatment services; however, because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) of these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain.

Potential effects associated with an increase in demand for solid waste management providers in the Plan Area and surrounding communities from solid waste generated by construction and operation of the proposed conservation components would be similar to those described under Alternative 1A. Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that construction and operation of the proposed conservation components would not cause any exceedance of landfill capacity.

Conservation components including habitat restoration and enhancement would be similar to those under Alternative 1A. The implementation of conservation components could result in utility service disruption or possible damage to underground utilities. Similarly, the long-term conversion of existing utility corridors to habitat purposes could require the relocation of utility infrastructure, which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. Because of the scale and duration of construction associated with implementing conservation components, there could be an increased demand for public services. This effect would not be considered adverse with the implementation of environmental commitments described in Appendix 3B, *Environmental Commitments*. These environmental commitments have been incorporated into this alternative and would provide for onsite security at construction sites and minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components.

Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation components would not result in potential effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, public schools).

The locations, construction, and operational details for these and other conservation components have not been identified. Adverse effects due to the construction, operation and maintenance activities associated with the conservation components are not expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand. Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would not be adverse with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, there is a potential for the disruption or relocation of utility infrastructure, which has the potential to result in an adverse effect. Further, no substantive adverse effects to solid waste management facilities are anticipated. Because the location and construction and operational

details (i.e., water consumption and water sources associated with conservation components) related to these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect would be adverse.

***CEQA Conclusion*:** Implementation of the proposed conservation components would not likely require alteration or construction of new government facilities due to increased need for public services and utilities. Several measures to reduce stressors on covered species could result in water supply requirements, but are not expected to require substantial increases in demand on municipal water and wastewater treatment services. Construction and operation activities associated with the proposed conservation components would result in a less than significant impact on solid waste management facilities based upon the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California. Potential impacts of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would be less than significant with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) of these facilities and programs have not yet been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less than significant level. Therefore, this would be a significant unavoidable impact.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

20.3.3.12 Alternative 6B—Isolated Conveyance with East Alignment and Intakes 1–5 (15,000 cfs; Operational Scenario D)

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the provision of law enforcement, fire protection, and emergency response services as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1B. Increased service demands would be experienced in the communities in which new construction workers relocate and in the areas in which construction would take place. The minor increase in construction workers relocating into the Plan Area for

specialized jobs during the construction period of approximately 9 years is not anticipated to result in a substantial increase in demand for law enforcement, fire protection and medical services because the estimated increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction. Accordingly, effects to fire protection, law enforcement and emergency response services from the increased demand of new workers in the Plan Area during construction of the proposed water conveyance facilities would not be considered adverse.

Incorporation of an environmental commitment that would ensure provision of 24-hour onsite private security at construction sites (Appendix 3B, *Environmental Commitments*) would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection.

Incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires would minimize potential effects related to the demand for law enforcement, fire protection, or emergency services (see Appendix 3B*, Environmental Commitments*). Construction of Alternative 6B would not increase the demand on law enforcement, fire protection, and emergency response services from new workers in the Plan Area such that it would result in the need for, new or physically altered governmental facilities. Impacts to emergency response times from construction traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. Accordingly, there would be no adverse effect

***CEQA Conclusion*:** The potential for impacts on law enforcement and fire services and facilities is not expected to be significant because the estimated increase in population in the Plan Area associated with construction of the alternative during peak construction would be distributed over multiple cities and counties within the Plan Area. In addition, environmental commitments would be incorporated into the alternative to reduce demand for law enforcement, fire protection, and emergency response services at or near construction sites from new construction workers in the Plan Area. Construction of Alternative 6B would not require new or physically altered governmental facilities to support the needs of new workers in the Plan Area. These impacts would be considered less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of Alternative 6B would have the same potential conflict with the Courtland FPD's Hood Fire Station as under Alternative 1B, possibly requiring replacement of the facility (Figure 20-6). Mitigation Measure UT-2 would be available to lessen the severity of the potential effect by ensuring continuation of fire protection services in the Courtland Fire Protection District service area, by the Courtland Fire Station which also serves the area. Implementation of Mitigation Measure UT-2 would also require the construction of a replacement facility, which could result in adverse environmental effects. Therefore, this effect would be adverse. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and effects would not be adverse.

***CEQA Conclusion*:** Depending on final design of the alignment, the alternative could require relocation of Courtland FPD's Hood Fire Station. While implementation of Mitigation Measure UT-2 would lessen the severity of the impact by ensuring continuation of fire protection services in the Courtland FPD service area, construction of a replacement facility could cause significant environmental effects. Construction of a replacement fire station would require subsequent

environmental review under CEQA. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and this impact could be less than significant.

Mitigation Measure UT-2: Ensure the Continuation of Fire Protection Services by the Courtland Fire Protection District

Please see Mitigation Measure UT-2 under Impact UT-2 in the discussion of Alternative 1A.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects on public schools as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1B. As under Alternative 1B, the majority of construction jobs are expected to be filled by workers from the existing five-county labor force. It is anticipated that there would be no increased demand for public school services from these workers (see Table 20A-4, Appendix 20A). Although some workers who relocate from outside of the Plan Area could have school-age children, resulting in an increase in public school enrollment, these new students would likely be distributed through a number of schools within the Plan Area. This minor increase in population in the Plan Area would not be expected to result in an increase in enrollment numbers sufficient to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. There would not be an adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the existing five-county labor force. Incremental increase in school-age children of construction personnel moving into the area for specialized construction jobs would likely be distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. The impact on public schools is less than significant. No mitigation is required.

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the need for expanded water or wastewater treatment facilities would be similar to those described for Alternative 1B. While water needs are substantial, these requirements would be temporary and could be met with non-municipal water sources without any new water supply entitlements. Also similar to Alternative 1B, wastewater created as a result of tunnel boring and concrete batching would be treated onsite at isolated RTM storage areas and designated concrete batch plant sites, respectively. Construction of Alternative 6B would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

***CEQA Conclusion*:** While construction of this alternative would require a substantial supply of water, this supply could be met by non-municipal sources. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Construction of Alternative 6B would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact would be less than significant. Mitigation is not required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Potential effects associated with an increased demand for solid waste management providers in the Plan Area and surrounding communities as a result of waste generated from construction of the proposed water conveyance facilities would be similar to those described under Alternative 1B. Under Alternative 6B, the total volume of excavated material that would require disposal at a landfill during the construction period (58.25 tons) represents a negligible impact on the 11 solid waste landfills which have a total remaining permitted capacity of over 300 million tons. Of the estimated 376,449 tons of construction debris that would be generated under this alternative, it assumed that 350,097 tons would be divertible, and that at least 50% (or 188,225) of construction waste would be diverted (in accordance with diversion requirements set forth by the State Agency Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Therefore, after consideration of diversion requirements, the volume of construction debris that require disposal at landfills represents a negligible effect on the remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. Construction of Alternative 6B would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There would be no adverse effect.

CEQA Conclusion: Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it would be expected that construction of the proposed water conveyance facilities would not cause any exceedance of landfill capacity. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 6B would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. Therefore, there would be a less than significant impact on solid waste management facilities. No mitigation is required.

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: The potential for disruption of utilities and relocation of existing utility facilities would be similar to that described under Alternative 1B. Regional power transmission lines and natural gas pipelines would require relocation. Additionally, inactive gas wells would need to be excavated and capped. The potential damage and disruption to buried and overhead electrical transmission lines would be similar for telecommunications infrastructure. Because relocation and disruption of existing utility infrastructure would be required under this alternative and would have

the potential to create effects through the relocation of facilities, this alternative would result in an adverse effect on utilities.

Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting existing facilities by crossing over or under infrastructure. However, construction of facilities would conflict with existing utility facilities in some locations. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Similar to Alternative 1B, the proposed water conveyance facilities under this alternative would be operated to provide diversions up to a total of 15,000 cfs from the new north Delta intakes. Under Alternative 6B, operation and maintenance of the proposed water conveyance facilities would be similar to that described under Alternative 1B, and would not result in potential effects associated with the need to construct new government facilities as a result of increased need for public services.

Because requirements for water and wastewater treatment under operations and maintenance of the water conveyance facilities would be primarily associated with intakes and intake pumping plant facilities, these effects are similar to those described under Alternative 1B. Operational differences involving increased diversion quantities from north Delta intakes could require more frequent maintenance activities under this alternative. However, quantities of water needed for these purposes would still be anticipated to be relatively small compared with municipal supplies.

Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities.

Similar to Alternative 1B, the operation and maintenance activities associated with the proposed water conveyance facilities are not expected to generate solid waste sufficient to create an increase in demand for solid waste management providers in the Plan Area and surrounding communities.

Operation and maintenance of water conveyance facilities under this alternative would not require improvements to the existing physical power transmission system, as discussed under Impact UT-6. As such, operation and maintenance activities associated with the proposed water conveyance facilities would not be expected to result in the disruption or relocation of utilities. Effects associated with energy demands of operation and maintenance of the proposed water conveyance facilities are addressed in Chapter 21, *Energy*.

Overall, operation and maintenance of the conveyance facilities under Alternative 1B would not result in adverse effects on public service demands, water supply and treatment capacity, wastewater treatment facilities, solid waste facilities, or conflict with local and regional utility lines. There would not be an adverse effect.

***CEQA Conclusion*:** Operation and maintenance activities associated with the proposed water conveyance facilities would not result in a significant impact related to construction of new government facilities from the increased need for public services, new water and wastewater treatment services, or solid waste management services; or disruption or relocation of utilities. The impact on public services and utilities would be less than significant. No mitigation is required.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Potential effects associated with the need to construct new government facilities to meet an increased need for public services resulting from the implementation of restoration conservation components and measures designed to reduce the effect of species-level stressors would be similar to those described under Alternative 1B. Potential variations from Alternative 1B 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. Potential effects of implementing conservation components on law enforcement, fire protection, and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. This effect would not be considered adverse with the implementation of environmental commitments to provide onsite private security services at construction areas and implement measures to minimize accidents and injuries, as described in Appendix 3B, *Environmental Commitments*.

Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation components would not result in effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, emergency responders, hospitals, public schools, libraries). Because the location for the implementation of conservation activities is not known at this point, it is not possible to determine whether the construction of conservation components would require demolition and replacement of a government facility.

Effects on municipal water facilities from conservation components would be similar to Alternative 1B with potential variations arising from the selection of different locations for habitat restoration or enhancement. Some activities associated with these measures could require municipal water and wastewater treatment services; however, because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) of these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect would be considered adverse.

Potential effects associated with an increase in demand for solid waste management providers in the Plan Area and surrounding communities from solid waste generated by construction and operation of the proposed conservation components would be similar to those described under Alternative 1B. Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that construction and operation of the proposed conservation components would not cause any exceedance of landfill capacity.

Conservation components including habitat restoration and enhancement would be similar to those described under Alternative 1B. Potential variation would result from selection of different restoration areas based on the physical footprint of water conveyance facilities. Like Alternative 1B, however, the implementation of conservation components could result in utility service disruption or possible damage to underground utilities. Similarly, the long-term conversion of existing utility corridors to habitat purposes could require the relocation of utility infrastructure, which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. Because of the scale and duration of construction associated with implementing conservation components, there could be an increased demand for public services. This effect would not be considered adverse with the implementation of environmental commitments described in Appendix 3B, *Environmental Commitments*. These environmental commitments have been incorporated into this alternative and would provide for onsite security at construction sites and minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components.

Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation components would not result in potential effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, public schools).

The locations, construction, and operational details for these and other conservation components have not been identified. Adverse effects due to the construction, operation and maintenance activities associated with the conservation components are not expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand. Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would not be adverse with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation

components. However, there is a potential for the disruption or relocation of utility infrastructure, which has the potential to result in an adverse effect. Further, no substantive adverse effects to solid waste management facilities are anticipated. Because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) of these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect would be adverse.

***CEQA Conclusion*:** Implementation of the proposed conservation components would not likely require alteration or construction of new government facilities resulting from an increased demand for public services and utilities. Measures to reduce stressors on covered species could result in water supply requirements, but are not expected to require substantial increases in demand for city or county water and wastewater treatment services. Construction and operation activities associated with the proposed conservation components would result in a less than significant impact on solid waste management facilities based on the capacity of the landfills in the region and the waste diversion requirements set forth by the State of California. Potential impacts of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would be less than significant with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) for these facilities and programs have not been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less than significant level. Therefore, this would be a significant unavoidable impact.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

20.3.3.13 Alternative 6C—Isolated Conveyance with West Alignment and Intakes W1–W5 (15,000 cfs; Operational Scenario D)

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the provision of law enforcement, fire protection, and emergency response services as a result of construction of the proposed water conveyance facilities would be

similar to those described for Alternative 1C. Increased service demands would be experienced in the communities in which new construction workers relocate and in the areas in which construction would take place.

As in Alternative 1C, the potential for Alternative 6C to result in an effect on law enforcement, fire protection, and emergency response services because of increased demand from new workers in the Plan Area during construction of the proposed water conveyance facilities is low. The minor increase in population associated with specialized construction jobs in the Plan Area during the construction period would not likely result in an increased demand for law enforcement, fire protection and medical services because the minor increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction. The incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires, and provide for on-site security at construction sites, would minimize potential effects related to demand for public services associated with construction property protection and the potential for construction-related accidents. Environmental commitments would be incorporated to reduce potential exposure of hazardous materials to the human and natural environment, thereby minimizing the potential related demand for fire or emergency services. Construction of Alternative 6C would not increase the demand on law enforcement, fire protection, and emergency response services from new workers in the Plan Area such that it would result in the need for, new or physically altered governmental facilities. Impacts to emergency response times from construction traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. The effect would not be adverse.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by the five-county labor force, and the minor increase in population associated with construction of specialized jobs (e.g., construction of tunnels) is not likely to result in an increased demand for law enforcement, fire protection, and medical services. There would be a less than significant impact on law enforcement, fire protection, and emergency response services from the increased demand of new workers who relocate to communities in the Plan Area during construction of the proposed water conveyance facilities because the minor increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction.

In addition, incorporation of environmental commitments that would address construction-related accidents associated with hazardous materials spills, contamination, and fires, and provide for onsite security at construction sites, would minimize potential impacts related to increased demand for public services associated with construction property protection and the potential for construction-related accidents. Environmental commitments would also be incorporated to reduce potential exposure of hazardous materials to the human and natural environment, thereby minimizing the potential demand for fire or emergency services. Construction of Alternative 6C would not require new or physically altered governmental facilities to support the needs of new workers in the Plan Area. These impacts would be considered less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: As under Alternative 1C, construction of the proposed water conveyance facilities under Alternative 6C would not conflict with a public facility, and therefore, would not require the construction or major alteration of such facilities. This effect would not be adverse.

***CEQA Conclusion*:** Construction of the proposed water conveyance facilities under Alternative 6C would not require the construction or major alteration of such facilities. Therefore, this impact would be less than significant. No mitigation is required.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects on public schools as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1C. Because most of the new jobs are expected to be filled by the existing five-county labor force, school-aged children of local construction personnel are already served by existing schools and school districts (see Table 20A-4, Appendix 20A). The incremental increase in school-age children of construction personnel moving into the area for specialized jobs would likely be temporary and distributed through a number of schools within the Plan Area. This increase would not be substantial enough to exceed the capacity of any identified school or district, or to warrant construction of a new facility. There would not be an adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the existing five-county labor force. Any incremental increase in school-age children of construction personnel moving into the area for specialized construction jobs would likely be distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. The impact on public schools would be less than significant. No mitigation is required.

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the need for expanded water or wastewater treatment facilities would be similar to those described for Alternative 1C. While water needs are substantial, these requirements would be temporary and could be met with non-municipal water sources without any new water supply entitlements. Construction of Alternative 6C would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

***CEQA Conclusion*:** While construction of this alternative would require a substantial supply of water, this supply could be met by non-municipal sources. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Construction of Alternative 6C would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact would be less than significant. Mitigation is not required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Potential effects associated with an increased demand for solid waste management providers in the Plan Area and surrounding communities as a result of waste generated from construction of the proposed water conveyance facilities would be similar to those described under Alternative 1C. Overall, the construction waste that could be generated by implementing Alternative 6C would be similar to Alternative 1C, and would not adversely affect capacity of available landfills

because it represents a negligible amount of the total remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. Further, at least 50% of construction waste would be diverted (diversion requirements set forth by the State Agency Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 6C would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There would be no adverse effect.

CEQA Conclusion: Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it would be expected that construction of the proposed water conveyance facilities would not cause any exceedance of landfill capacity. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 6C would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. Therefore, there would be a less than significant impact on solid waste management facilities. No mitigation is required.

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: The potential for disruption of utilities and relocation of existing utility facilities would be similar to that described under Alternative 1C. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Relocation of additional facilities near proposed forebays, RTM, and borrow or spoils areas may also be necessary. The potential damage and disruption to buried and overhead electrical transmission lines would be similar for telecommunications. Because relocation and disruption of existing utility infrastructure would be required under this alternative and would have the potential to create effects through the relocation of facilities, this alternative would result in an adverse effect on utilities.

Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting existing facilities by crossing over or under infrastructure. However, construction of facilities would conflict with existing utility facilities in some locations. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and

abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Similar to Alternative 1C, the proposed water conveyance facilities under Alternative 6C would be operated to provide diversions up to a total of 15,000 cfs from the new north Delta intakes. Potential effects associated with operation and maintenance of water conveyance facilities would be similar to those described under Alternative 1C. Therefore, Alternative 6C would not result in physical impacts associated with the provision of new or physically altered government facilities.

Because requirements for water and wastewater treatment under operations and maintenance of the water conveyance facilities would be primarily associated with intakes and intake pumping plant facilities, these effects are similar to those described under Alternative 1C. Operational differences involving increased diversion quantities from north Delta intakes could require more frequent maintenance activities under this alternative. However, quantities of water needed for these purposes would still be anticipated to be relatively small compared with municipal supplies. Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities.

Similar to Alternative 1C, the operation and maintenance activities associated with the proposed water conveyance facilities are not expected to generate solid waste sufficient to create an increase in demand for solid waste management providers in the Plan Area and surrounding communities. Therefore, there would be no adverse effect to solid waste management facilities under Alternative 6C.

Operation and maintenance of water conveyance facilities under this alternative would not require improvements to the existing physical power transmission system, as discussed under Impact UT-6. As such, operation and maintenance activities associated with the proposed water conveyance facilities would not be expected to result in the disruption or relocation of utilities. Effects

associated with energy demands of operation and maintenance of the proposed water conveyance facilities are addressed in Chapter 21, *Energy*.

Overall, operation and maintenance of the conveyance facilities under Alternative 6C would not result in adverse effects on public service demands, water supply and treatment capacity, wastewater treatment facilities, solid waste facilities, or conflict with local and regional utility lines. There would not be an adverse effect.

***CEQA Conclusion*:** Operation and maintenance activities associated with the proposed water conveyance facilities would not result in a significant impact related to construction of new government facilities from the increased need for public services, new water and wastewater treatment services, or solid waste management services; or disruption or relocation of utilities. The impact on public services and utilities would be less than significant. No mitigation is required.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Potential effects associated with the need to construct new government facilities as a result of increased need for public services due to the implementation of restoration conservation components and those measures designed to reduce the effect of species-level stressors would be similar to those described under Alternative 1C. Potential variation from Alternative 1C 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. Because the location for the implementation of conservation activities is not known at this point, it is not possible to determine whether the construction of conservation components would require demolition and replacement of a government facility.

Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. Incorporation of an environmental commitment that would provide 24-hour onsite private security at construction sites (Appendix 3B, *Environmental Commitments*) would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection. Incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires would minimize potential effects related to the demand for law enforcement, fire protection, or emergency services (Appendix 3B*, Environmental Commitments*). Accordingly, there would be no adverse effect.

Effects on municipal water facilities from conservation components would be similar to Alternative 1C with potential variations arising from the selection of different locations for habitat restoration or enhancement. Some activities associated with these measures could require municipal water and wastewater treatment services; however, because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) for these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain.

Potential effects associated with an increase in demand for solid waste management providers in the Plan Area and surrounding communities from solid waste generated by construction and operation of the proposed conservation components would be similar to those described under Alternative 1C. Based upon the capacity of the landfills in the region, and the waste diversion

requirements set forth by the State of California, it is expected that the implementing the proposed conservation components would not cause any exceedance of landfill capacity.

Conservation components including habitat restoration and enhancement would be similar to those described under Alternative 1A. Potential variation would result from selection of different restoration areas based on the physical footprint of water conveyance facilities. Similar to Alternative 1A, however, the implementation of conservation components could result in utility service disruption or possible damage to underground utilities. Similarly, the long-term conversion of existing utility corridors to habitat purposes could require the relocation of utility infrastructure, which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. Because of the scale and duration of construction associated with implementing conservation components, there could be an increased demand for public services. This effect would not be considered adverse with the implementation of environmental commitments described in Appendix 3B, *Environmental Commitments*. These environmental commitments have been incorporated into this alternative and would provide for onsite security at construction sites and minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components.

Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation components would not result in potential effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, public schools).

The locations, construction, and operational details for conservation components have not been identified. Adverse effects due to the construction, operation and maintenance activities associated with the conservation components are not expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand. Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would not be adverse with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, there is a potential for the disruption or relocation of utility infrastructure, which has the potential to result in an adverse effect. Further, no substantive adverse effects to solid waste management facilities are anticipated. Because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) for these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect would be adverse.

***CEQA Conclusion*:** Implementation of the proposed conservation components would not likely require alteration or construction of new government facilities due to an increased demand for public services and utilities. Several measures to reduce stressors on covered species could result in water supply requirements, but are not expected to require substantial increases in demand for city or county water and wastewater treatment services. Construction and operation activities

associated with the proposed conservation components would result in a less than significant impact on solid waste management facilities based on the capacity of the landfills in the region and the waste diversion requirements set forth by the State of California. Potential impacts of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would be less than significant with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, the location and construction or operational details (i.e., water consumption and water sources associated with conservation components) for these facilities and programs have not been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less than significant level. Therefore, this would be a significant unavoidable impact.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

20.3.3.14 Alternative 7—Dual Conveyance with Pipeline/Tunnel, Intakes 2, 3, and 5, and Enhanced Aquatic Conservation (9,000 cfs; Operational Scenario E)

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the provision of law enforcement, fire protection, and emergency response services as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1A. Increased service demands would be experienced in the communities in which new construction workers relocate and in the areas in which construction would take place. However, effects on services from the presence of new workers in the Plan Area would be anticipated to be somewhat less than for Alternative 1A because this alternative would involve constructing three intake facilities rather than five.

The minor increase in construction workers relocating into the Plan Area for specialized jobs (e.g., tunnel construction) during the construction period of approximately 9 years is not anticipated to result in a substantial increase in demand for law enforcement, fire protection and medical services because the estimated increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction.

Incorporation of an environmental commitment that would provide 24-hour onsite private security at construction sites (Appendix 3B, *Environmental Commitments*) would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection.

Incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires would minimize potential effects related to the demand for law enforcement, fire protection, or emergency services (see Appendix 3B, *Environmental Commitments*). Construction of Alternative 2B would not increase the demand on law enforcement, fire protection, and emergency response services from new workers in the Plan Area such that it would result in the need for, new or physically altered governmental facilities. Impacts to emergency response times from construction traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. Accordingly, there would be no adverse effect.

***CEQA Conclusion*:** The potential for impacts on law enforcement and fire services and facilities is not expected to be significant because the estimated increase in population in the Plan Area associated with construction of the alternative during peak construction would be distributed over multiple cities and counties within the Plan Area. In addition, environmental commitments would be incorporated into the alternative to reduce demand for law enforcement, fire protection, and emergency response services at or near construction sites from new construction workers in the Plan Area, and effects on local law enforcement agencies associated with construction property protection. Construction of Alternative 7 would not require new or physically altered governmental facilities to support the needs of new workers in the Plan Area. These impacts would be considered less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of Alternative 7 would have the same potential conflict with the Courtland FPD's Hood Fire Station as under Alternative 1A, possibly requiring replacement of the facility (Figure 20-5). Mitigation Measure UT-2 would be available to lessen the severity of the potential effect to not adverse by ensuring continuation of fire protection services in the Courtland Fire Protection District service area, by the Courtland Fire Station which also serves the area. Implementation of Mitigation Measure UT-2 would also require the construction of a replacement facility, which could result in adverse environmental effects. Therefore, this effect would be adverse. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and effects would not be adverse.

***CEQA Conclusion*:** Depending on final design of the alignment, the alternative could require relocation of Courtland FPD's Hood Fire Station. While implementation of Mitigation Measure UT-2 would lessen the severity of the impact by ensuring continuation of fire protection services in the Courtland FPD service area, construction of a replacement facility could cause significant environmental effects. Construction of a replacement fire station would require subsequent environmental review under CEQA. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and this impact could be less than significant.

Mitigation Measure UT-2: Ensure the Continuation of Fire Protection Services by the Courtland Fire Protection District

Please see Mitigation Measure UT-2 under Impact UT-2 in the discussion of Alternative 1A.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects on public schools as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1A. However, the population increase associated with construction of the proposed water conveyance facilities during peak construction would be less because Alternative 7 would involve construction of three intake facilities rather than five. The minor increase in school-age children of construction personnel moving into the area for specialized jobs (e.g., tunnel construction) would likely be distributed through a number of schools within the Plan Area. This increase would not be substantial enough to exceed the capacity of any identified school or district, or to warrant construction of a new facility. There would not be an adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the existing five-county labor force. The minor increase in school-age children of construction personnel moving into the area for specialized construction jobs (e.g., tunnel construction) would likely be distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. The impact on public schools is less than significant. No mitigation is required.

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the need for expanded water or wastewater treatment facilities would be similar to those for Alternative 4. Under this alternative, however, concrete batch plants would require a smaller quantity of water for concrete production because only three intake facilities (and associated conveyance pipelines and other structures) would be constructed. While water supply needs would still be substantial, these requirements would be temporary and could be met with non-municipal water sources without any new water supply entitlements. Based on the number of major structures associated with this alternative, it is estimated that 14 field offices would be needed, which would use 18 million gallons of water. In addition, 140 million gallons of water would be used for activities associated with concrete batch plants. The total potable water supply needed under this alternative is estimated to be 158.4 million gallons (Table 20-3). While water supply needs would still be substantial, these requirements would be temporary and could be met with non-municipal water sources without any new water supply entitlements. Also similar to Alternative 4, wastewater created as a result of tunnel boring and concrete batching would be treated onsite at isolated RTM storage areas and designated concrete batch plant sites, respectively. Construction of Alternative 7 would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

***CEQA Conclusion*:** While construction of this alternative would require a substantial supply of water, this supply could be met by non-municipal sources. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Construction of Alternative 7 would not require or result in the construction of new water or wastewater treatment

facilities or expansion of existing facilities. This impact would be less than significant. Mitigation is not required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Potential effects associated with an increased demand for solid waste management providers in the Plan Area and surrounding communities as a result of waste generated from construction of the proposed water conveyance facilities would be similar to those described under Alternative 1A. However, there would be less solid waste generated as a result of construction because Alternative 7 would only require construction of three intake facilities. Overall, the construction waste that could be generated by implementing Alternative 7 would not adversely affect capacity of available landfills because it represents a negligible amount of the total remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. Further, at least 50% of construction waste would be diverted (diversion requirements set forth by the State Agency Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 7 would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There would be no adverse effect.

***CEQA Conclusion*:** Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it would be expected that construction of the proposed water conveyance facilities would not cause any exceedance of landfill capacity. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 7 would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. Therefore, there would be a less than significant impact on solid waste management facilities. No mitigation is required.

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Disruption of utilities and relocation of existing utility facilities under Alternative 7 would be similar to those described for Alternative 1A. Because Alternative 7 would only construct Intakes 2, 3, and 5, implementing it would avoid potential conflicts associated with Intakes 1 and 4. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Relocation of additional facilities near proposed forebays, RTM, and borrow or spoils areas may also be necessary. The potential damage and disruption to buried and overhead electrical transmission lines would be

similar for telecommunications. Because relocation and disruption of existing utility infrastructure would be required under this alternative and would have the potential to create effects through the relocation of facilities, this alternative would result in an adverse effect on utilities.

Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting existing facilities by crossing over or under infrastructure. However, construction of facilities would conflict with existing utility facilities in some locations. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: The proposed water conveyance facilities under this alternative would be operated to provide diversions up to a total of 9,000 cfs from three new north Delta intakes, rather than 15,000 cfs from five intakes under Alternative 1A. However, potential effects associated with operation and maintenance of water conveyance facilities would be similar to those described under Alternative 1A. Therefore, Alternative 7 would not result in physical impacts associated with the provision of new or physically altered government facilities.

Because requirements for water and wastewater treatment under operations and maintenance of the water conveyance facilities would be primarily associated with intakes and intake pumping plant facilities, these effects would be similar to but smaller than those described under Alternative 1A because this alternative would build three intake facilities rather than five. Quantities of water needed for these purposes would be anticipated to be relatively small compared with municipal

supplies. Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities.

Similar to Alternative 1A, the operation and maintenance activities associated with the proposed water conveyance facilities are not expected to generate solid waste such that there would be an increase in demand for solid waste management providers in the Plan Area and surrounding communities. Because Alternative 7 includes only three intakes and not five as under Alternative 1A, the volume of solids generated from the sediment load within the river would be less than the estimated volume under Alternative 1A.

Operation and maintenance of water conveyance facilities under this alternative would not require improvements to the existing physical power transmission system, as discussed under Impact UT-6. As such, operation and maintenance activities associated with the proposed water conveyance facilities would not be expected to result in the disruption or relocation of utilities. Effects associated with energy demands of operation and maintenance of the proposed water conveyance facilities are addressed in Chapter 21, *Energy*.

Overall, operation and maintenance of the conveyance facilities under Alternative 7 would not result in adverse effects on service demands, water capacity, wastewater and solid waste facilities or conflict with local and regional utility lines because demand for law enforcement and fire protection services would be temporary over a six-county area, new water and wastewater treatment service would be handled onsite, and adequate solid waste disposal capacity exists to handle construction waste. There would not be an adverse effect.

***CEQA Conclusion*:** Operation and maintenance activities associated with the proposed water conveyance facilities would not result in a significant impact related to construction of new government facilities from the increased need for public services, new water and wastewater treatment services, or solid waste management services; or disruption or relocation of utilities. The impact on public services and utilities would be less than significant. No mitigation is required.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Potential effects associated with the need to construct new government facilities to meet an increased need for public services resulting from the implementation of restoration conservation components and those measures designed to reduce the effect of species-level stressors would be similar to those 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. Because the location for the implementation of conservation activities is not known at this point, it is not possible to determine whether the construction of conservation components would require demolition and replacement of a government facility.

Effects on municipal water facilities from conservation components would be similar to those for Alternative 1A. Service demands related to channel margin habitat enhancement areas and seasonally-inundated floodplain restoration areas would be greater, based on respective targets of 40 miles and 20,000 acres for these measures under this alternative, compared with 20 miles and 10,000 acres for Alternative 1A. Some activities associated with these measures could require municipal water and wastewater treatment services; however, because the location and construction and operational details (i.e., water consumption and water sources associated with

conservation components) of these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain.

Potential effects associated with an increase in demand for solid waste management providers in the Plan Area and surrounding communities from solid waste generated by construction and operation of the proposed conservation components would be similar to those described under Alternative 1A. Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that construction and operation of the proposed conservation components would not cause any exceedance of landfill capacity.

Conservation components including habitat restoration and enhancement would be similar to those described under Alternative 1A; however, under this alternative, 40 miles of channel margin habitat would be enhanced and 20,000 acres of seasonally inundated floodplain would be restored, rather than 20 miles and 10,000 acres, respectively, under Alternative 1A. The implementation of conservation components could result in utility service disruption or possible damage to underground utilities. Similarly, the long-term conversion of existing utility corridors to habitat purposes could require the relocation of utility infrastructure, which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. Because of the scale and duration of construction associated with implementing conservation components, there could be an increased demand for public services. This effect would not be considered adverse with the implementation of environmental commitments described in Appendix 3B, *Environmental Commitments*. These environmental commitments have been incorporated into this alternative and would provide for onsite security at construction sites and minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components.

Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation components would not result in potential effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, public schools).

The locations, construction, and operational details for these and other conservation components have not been identified. Adverse effects due to the construction, operation and maintenance activities associated with the conservation components are not expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand. Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would not be adverse with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, there is a potential for the disruption or relocation of utility infrastructure, which has the potential to result in an adverse effect. Further, no substantive adverse effects to solid waste management facilities are anticipated. Because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components)

related to these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect would be adverse.

CEQA Conclusion: Implementation of the proposed conservation components would not likely require alteration or construction of new government facilities due to increased need for public services and utilities. Several measures to reduce stressors on covered species could result in water supply requirements, but are not expected to require substantial increases in demand on municipal water and wastewater treatment services. Construction and operation activities associated with the proposed conservation components would result in a less than significant impact on solid waste management facilities based upon the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California. Potential impacts of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would be less than significant with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) of these facilities and programs have not yet been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less than significant level. Therefore, this would be a significant unavoidable impact.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

20.3.3.15 Alternative 8—Dual Conveyance with Pipeline/Tunnel, Intakes 2, 3, and 5, and Increased Delta Outflow (9,000 cfs; Operational Scenario F)

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the provision of law enforcement, fire protection, and emergency response services as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1A. Increased service demands would be experienced in the communities in which new construction workers relocate and in the areas in which construction would take place. However, effects on services from the presence of new workers in the Plan Area

would be anticipated to be somewhat less than for Alternative 1A because this alternative would involve three intake facilities rather than five.

The minor increase in construction workers relocating into the Plan Area for specialized jobs (e.g., tunnel construction) during the construction period of approximately 9 is not anticipated to result in a substantial increase in demand for law enforcement, fire protection and medical services because the estimated increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction.

Incorporation of an environmental commitment that would provide 24-hour onsite private security at construction sites (Appendix 3B, *Environmental Commitments*) would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection.

Incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires would minimize potential effects related to the demand for law enforcement, fire protection, or emergency services (see Appendix 3B, *Environmental Commitments*). Construction of Alternative 8 would not increase the demand on law enforcement, fire protection, and emergency response services from new workers in the Plan Area such that it would result in the need for, new or physically altered governmental facilities. Impacts to emergency response times from construction traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. Accordingly, there would be no adverse effect.

***CEQA Conclusion*:** The potential for impacts on law enforcement and fire services and facilities is not expected to be significant because the estimated increase in population in the Plan Area associated with construction of the alternative during peak construction would be distributed over multiple cities and counties within the Plan Area. In addition, environmental commitments would be incorporated into the alternative to reduce demand for law enforcement, fire protection, and emergency response services at or near construction sites from new construction workers in the Plan Area, and effects on local law enforcement agencies associated with construction property protection. Construction of Alternative 8 would not require new or physically altered governmental facilities to support the needs of new workers in the Plan Area. These impacts would be considered less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Construction of Alternative 8 would have the same potential conflict with the Courtland FPD's Hood Fire Station as under Alternative 1A, possibly requiring replacement of the facility (Figure 20-5). Mitigation Measure UT-2 would be available to lessen the severity of the potential effect to not adverse by ensuring continuation of fire protection services in the Courtland Fire Protection District service area, by the Courtland Fire Station which also serves the area. Implementation of Mitigation Measure UT-2 would also require the construction of a replacement facility, which could result in adverse environmental effects. Therefore, this effect would be adverse. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and effects would not be adverse.

***CEQA Conclusion*:** Depending on final design of the alignment, the alternative could require relocation of Courtland FPD's Hood Fire Station. While implementation of Mitigation Measure UT-2 would lessen the severity of the impact by ensuring continuation of fire protection services in the

Courtland FPD service area, construction of a replacement facility could cause significant environmental effects. Construction of a replacement fire station would require subsequent environmental review under CEQA. If, however, coordination were successful, environmental commitments and mitigation measures would be adopted by the Courtland Fire District and Sacramento County and this impact could be less than significant.

Mitigation Measure UT-2: Ensure the Continuation of Fire Protection Services by the Courtland Fire Protection District

Please see Mitigation Measure UT-2 under Impact UT-2 in the discussion of Alternative 1A.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects on public schools as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1A. However, the population increase associated with construction of the proposed water conveyance facilities during peak construction would be less because Alternative 8 would involve construction of three intake facilities rather than five. The minor increase in school-age children of construction personnel moving into the area for specialized jobs (e.g., tunnel construction) would likely be distributed through a number of schools within the Plan Area. This increase would not be substantial enough to exceed the capacity of any identified school or district, or to warrant construction of a new facility. There would not be an adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the existing five-county labor force. The minor increase in school-age children of construction personnel moving into the area for specialized construction jobs (e.g., tunnel construction) would likely be distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. The impact on public schools is less than significant. No mitigation is required.

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the need for expanded water or wastewater treatment facilities would be similar to those for Alternative 4. Under this alternative, however, concrete batch plants would require a smaller quantity of water for concrete production because only three intake facilities (along with associated conveyance pipelines and other structures) would be constructed. Based on the number of major structures associated with this alternative, it is estimated that 14 field offices would be needed, which would use 18 million gallons of water. In addition, 140 million gallons of water would be used for activities associated with concrete batch plants. The total potable water supply needed under this alternative is estimated to be 158.4 million gallons (Table 20-3). While water supply needs would still be substantial, these requirements would be temporary and could be met with non-municipal water sources without any new water supply entitlements. Also similar to Alternative 4, wastewater created as a result of tunnel boring and concrete batching would be treated onsite at isolated RTM storage areas and designated concrete batch plant sites, respectively. Construction of Alternative 8 would not require or result in the construction of new

water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

***CEQA Conclusion*:** While construction of this alternative would require a substantial supply of water, this supply could be met by non-municipal sources. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Construction of Alternative 8 would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact would be less than significant. Mitigation is not required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Potential effects associated with an increased demand for solid waste management providers in the Plan Area and surrounding communities as a result of waste generated from construction of the proposed water conveyance facilities would be similar to those described under Alternative 1A. However, there would be less solid waste generated as a result of construction because Alternative 8 would only require construction of three intake facilities. Overall, the construction waste that could be generated by implementing Alternative 8 would not adversely affect capacity of available landfills because it represents a negligible amount of the total remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. Further, at least 50% of construction waste would be diverted (diversion requirements set forth by the State Agency Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 8 would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There would be no adverse effect.

CEQA Conclusion: Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it would be expected that construction of the proposed water conveyance facilities would not cause any exceedance of landfill capacity. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 8 would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. Therefore, there would be a less than significant impact on solid waste management facilities. No mitigation is required.

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Disruption of utilities and relocation of existing utility facilities under Alternative 8 would be similar to those described for Alternative 1A. Because Alternative 8 would only construct Intakes 2, 3, and 5, implementing it would avoid potential conflicts associated with Intakes 1 and 4. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Relocation of additional facilities near proposed forebays, RTM, and borrow or spoils areas may also be necessary. The potential damage and disruption to buried and overhead electrical transmission lines would be similar for telecommunications. Because relocation and disruption of existing utility infrastructure would be required under this alternative and would have the potential to create effects through the relocation of facilities, this alternative would result in an adverse effect on utilities.

Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting existing facilities by crossing over or under infrastructure. However, construction of facilities would conflict with existing utility facilities in some locations. Regional power transmission lines and one natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: The proposed water conveyance facilities under this alternative would be operated to provide diversions up to a total of 9,000 cfs from three new north Delta intakes, rather than 15,000 cfs from five intakes under Alternative 1A. However, potential effects associated with operation and

maintenance of water conveyance facilities would be similar to those described under Alternative 1A. Therefore, Alternative 8 would not result in physical impacts associated with the provision of new or physically altered government facilities.

Because requirements for water and wastewater treatment under operations and maintenance of the water conveyance facilities would be primarily associated with intakes and intake pumping plant facilities, these effects would be similar to but smaller than those described under Alternative 1A because this alternative would build three intake facilities rather than five. Quantities of water needed for these purposes would be anticipated to be relatively small compared with municipal supplies. Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities.

Similar to Alternative 1A, the operation and maintenance activities associated with the proposed water conveyance facilities are not expected to generate solid waste sufficient to increase demand for solid waste management providers in the Plan Area and surrounding communities. Because Alternative 8 includes only three intakes and not five as under Alternative 1A, the volume of solids generated from the sediment load within the river would be less than the estimated volume under Alternative 1A.

Operation and maintenance of water conveyance facilities under this alternative would not require improvements to the existing physical power transmission system, as discussed under Impact UT-6. As such, operation and maintenance activities associated with the proposed water conveyance facilities would not be expected to result in the disruption or relocation of utilities. Effects associated with energy demands of operation and maintenance of the proposed water conveyance facilities are addressed in Chapter 21, *Energy*.

Overall, operation and maintenance of the conveyance facilities under Alternative 8 would not result in adverse effects on service demands, water capacity, wastewater and solid waste facilities or conflict with local and regional utility lines because demand for law enforcement and fire protection services would be temporary over a six-county area, new water and wastewater treatment service would be handled onsite, and adequate solid waste disposal capacity exists to handle construction waste. There would not be an adverse effect.

***CEQA Conclusion*:** Operation and maintenance activities associated with the proposed water conveyance facilities would not result in a significant impact related to construction of new government facilities from the increased need for public services, new water and wastewater treatment services, or solid waste management services; or disruption or relocation of utilities. The impact on public services and utilities would be less than significant. No mitigation is required.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Potential effects associated with the need to construct new government to meet an increased need for public services resulting from the implementation of restoration conservation components and those measures designed to reduce the effect of species-level stressors 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. Because the location for the implementation of conservation activities is not known at

this point, it is not possible to determine whether the construction of conservation components would require demolition and replacement of a government facility.

Effects on municipal water facilities from conservation components would be similar to those for Alternative 1A. Some activities associated with these measures could require municipal water and wastewater treatment services; however, because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) of these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain.

Potential effects associated with an increase in demand for solid waste management providers in the Plan Area and surrounding communities from solid waste generated by construction and operation of the proposed conservation components would be similar to those described under Alternative 1A. Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that construction and operation of the proposed conservation components would not cause any exceedance of landfill capacity.

Conservation components including habitat restoration and enhancement would be similar to those described under Alternative 1A. The implementation of conservation components could result in utility service disruption or possible damage to underground utilities. Similarly, the long-term conversion of existing utility corridors to habitat purposes could require the relocation of utility infrastructure, which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. Because of the scale and duration of construction associated with implementing conservation components, there could be an increased demand for public services. This effect would not be considered adverse with the implementation of environmental commitments described in Appendix 3B, *Environmental Commitments*. These environmental commitments have been incorporated into this alternative and would provide for onsite security at construction sites and minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components.

Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation components would not result in potential effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, public schools).

The locations, construction, and operational details for these and other conservation components have not been identified. Adverse effects due to the construction, operation and maintenance activities associated with the conservation components are not expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand. Potential effects of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would not be adverse with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, there is a potential for the disruption or relocation of utility infrastructure,

which has the potential to result in an adverse effect. Further, no substantive adverse effects to solid waste management facilities are anticipated. Because the location and construction and operational details (i.e., water consumption and water sources associated with conservation components) related to these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect would be adverse.

***CEQA Conclusion*:** Implementation of the proposed conservation components would not likely require alteration or construction of new government facilities due to increased need for public services and utilities. Several measures to reduce stressors on covered species could result in water supply requirements, but are not expected to require substantial increases in demand on municipal water and wastewater treatment services. Construction and operation activities associated with the proposed conservation components would result in a less than significant impact on solid waste management facilities based upon the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California. Potential impacts of implementing conservation components on law enforcement, fire protection and emergency response services within the ROAs would be less than significant with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation components. However, the location, construction and operational details (i.e., water consumption and water sources associated with conservation components) of these facilities and programs have not yet been developed. Therefore, the need for new or expanded water or wastewater treatment facilities is uncertain. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less than significant level. Therefore, this would be a significant unavoidable impact.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

20.3.3.16 Alternative 9—Through Delta/Separate Corridors (15,000 cfs; Operational Scenario G)

Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency Response Services from New Workers in the Plan Area as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects related to the provision of law enforcement, fire protection, and emergency response services as a result of construction of the proposed water conveyance facilities would be

similar to those described for Alternative 1A. However, the estimated number construction workers under Alternative 9 is less than under Alternative 1A because it involves construction of fewer structural features. Alternative 9 would require approximately 3,210 workers, most of whom are expected to come from the existing five-county labor force. As such, effects on services from the presence of any new workers that may move into the region for specialized jobs in the Plan Area would be even less than under Alternative 1A.

The minor increase in construction workers relocating into the Plan Area for specialized jobs during the construction period of approximately 9 years is not anticipated to result in a substantial increase in demand for law enforcement, fire protection and medical services because the estimated increase in demand would be spread across a large multi-county area and would not be expected to disproportionately affect any one jurisdiction.

Incorporation of an environmental commitment that would provide 24-hour onsite private security at construction sites (Appendix 3B, *Environmental Commitments*) would ensure there would be no adverse effect on local law enforcement agencies associated with construction property protection.

Incorporation of environmental commitments that would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires would minimize potential effects related to the demand for law enforcement, fire protection, or emergency services (see Appendix 3B, *Environmental Commitments*). Construction of Alternative 9 would not increase the demand on law enforcement, fire protection, and emergency response services from new workers in the Plan Area such that it would result in the need for, new or physically altered governmental facilities. Impacts to emergency response times from construction traffic using emergency routes are discussed in Chapter 19 Impact Trans-3. Accordingly, there would be no adverse effect.

***CEQA Conclusion*:** The potential for impacts on law enforcement and fire services and facilities is not expected to be significant because the estimated increase in population in the Plan Area associated with construction of the alternative during peak construction would be distributed over multiple cities and counties within the Plan Area. In addition, environmental commitments would be incorporated into the alternative to reduce demand for law enforcement, fire protection, and emergency response services at or near construction sites from new construction workers in the Plan Area, and effects on local law enforcement agencies associated with construction property protection. Construction of Alternative 9 would not require new or physically altered governmental facilities to support the needs of new workers in the Plan Area. These impacts would be considered less than significant. No mitigation is required.

Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 9, construction of the proposed water conveyance facilities would not conflict with a public facility, and therefore, would not require the construction or major alteration of such facilities. This effect would not be adverse.

***CEQA Conclusion*:** Construction of the proposed water conveyance facilities under Alternative 9 would not require the construction or major alteration of such facilities. Therefore, this impact would be less than significant. No mitigation is required.

Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects on public schools as a result of construction of the proposed water conveyance facilities would be similar to those described for Alternative 1A. However, the population increase associated with construction of the proposed water conveyance facilities during peak construction would be less because Alternative 9 would involve construction of fewer structural features. Construction under Alternative 9 would require an estimated 3,210 workers within the Plan Area during peak construction (Table 20-2). Since most of the new jobs are expected to be filled by the existing five-county labor force, school-aged children of local construction personnel are already served by existing schools and school districts (see Table 20A-4, Appendix 20A). The incremental increase in school-age children of construction personnel moving into the area for specialized jobs would likely be temporary and distributed through a number of schools within the Plan Area. This increase would not be substantial enough to exceed the capacity of any identified school or district, or to warrant construction of a new facility. There would not be an adverse effect.

***CEQA Conclusion*:** The majority of construction jobs are expected to be filled by workers from the existing five-county labor force. The minor increase in school-age children of construction personnel moving into the area for specialized construction jobs would likely be temporary and distributed through a number of schools within the Plan Area. This increase in school enrollment would not be substantial enough to exceed the capacity of any individual school or district, or to warrant construction of a new facility within the Plan Area. The impact on public schools is less than significant. No mitigation is required.

Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: The mechanisms for potential effects related to the need for expanded water or wastewater treatment facilities would be similar to those described for Alternative 1A. Although the water conveyance facilities constructed under Alternative 9 would not require tunneling, the amount of concrete needed for the construction of this alternative is estimated to be 1.4 million cubic yards of concrete (as opposed to 1.5 million cubic yards under Alternative 1A). However, concrete production would still be required for the construction of intakes, pumping plants, barriers, siphons, and bridges. It is estimated that 42 million gallons of water would be used for activities associated with the three concrete batch plants. In addition, based on the number of major structures associated with this alternative, it is estimated that 10 field offices would be needed, which would use 13 million gallons of water. The total potable water supply needed under this alternative is estimated to be 55.2 million gallons (Table 20-3).

While water needs under Alternative 9 would still be substantial, these requirements would be temporary and could be met with non-municipal water sources without any new water supply entitlements. Also similar to Alternative 1A, wastewater created as a result of tunnel boring and concrete batching would be treated onsite at isolated RTM storage areas and designated concrete batch plant sites, respectively. Construction of Alternative 9 would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

***CEQA Conclusion*:** While construction of this alternative would require a substantial supply of water, this supply could be met by non-municipal sources. Additional needs for wastewater treatment and potable water could also be served by non-municipal entities. Construction of

Alternative 9 would not require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities. This impact would be less than significant. Mitigation is not required.

Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: Potential effects associated with an increased demand for solid waste management providers in the Plan Area and surrounding communities as a result of waste generated from construction of the proposed water conveyance facilities would be similar to those described under Alternative 1A. However, there would be less solid waste generated as a result of construction because Alternative 9 would only require construction of two intake facilities. Therefore, no substantive adverse effects to solid waste management facilities are anticipated under Alternative 9. There would be no adverse effect.

For purposes of this analysis, an estimate of the total quantity of excavated material to be disposed at a landfill was calculated for each facility of the alternative based on construction cost estimating documents. Construction of Alternative 9 is estimated to generate 22,901 tons of excavated materials that would require disposal at a landfill, and 201,459 tons of excavated material that would require upland disposal[24]. Of these estimates, up to 22.90 tons (i.e., 0.1% of the 22,901 tons) of excavated materials would require disposal at a landfill. Of the upland dredged material, 1,008 tons would not be disposed of onsite, but rather would possibly require specialized landfill disposal due to anticipated presence of heavy metals, the pesticide DDE, and polynuclear aromatic carbons that may exceed some screening limits. Although it is not known which landfills would be utilized during construction of the proposed water conveyance facilities, disposal of demolition and excavated material would be expected to occur at several different locations depending on the type of material and its origin. It is standard practice that the construction contractors handle and dispose of all hazardous and non-hazardous materials during construction. Of the solid waste facilities in the Plan Area counties, there are 30 active facilities that can handle solid waste, including 11 solid waste landfills with a remaining permitted capacity of well over 300 million tons, and 18 large volume transfer/processing facilities (see Appendix 20A, Table 20A-6 for a listing of each facility's name, location, permitted capacity, remaining capacity, maximum permitted daily throughput, and proximity to the statutory Delta). According to the CalRecycle SWIS, the 11 solid waste landfills within the study area have estimated to "cease operation" dates[25] ranging from between 2016 and 2082. Of the remaining permitted capacity at area landfills, approximately 70% of the capacity is associated with landfills that are not expected to close for 18 to 70 more years (CalRecycle 2012).

[24] Upland disposal means that the spoil may not be in contact with surface water, that run-off from the spoil may not enter a surface water body, and/or the spoil may not be placed where soluble metals or other contaminants can leach to groundwater. A high level review of sediment characterization data obtained in anticipation of dredging Middle River as part of the South Delta Improvements Program associated with Alternative 9, was performed. The review indicated that the possible dredged material may contain some heavy metals, the pesticide DDE, and polynuclear aromatic carbons that may exceed some screening limits, and therefore may require upland disposal of the dredged material.

[25] As defined by the California Department of Resources Recycling and Recovery (CalRecycle), for active disposal facilities, the ceased operations date is the estimated date when the facility will reach its permitted capacity. That date is found in or estimated from information in the current permit or permit application for a particular facility, including the approved closure plan for the facility (CalRecycle 2012).

Construction debris, including debris from structure demolition, power poles, utility lines, piping, and other materials would also be generated as a result of construction of this alternative. For purposes of this analysis, the volume of construction debris generated during construction was based on estimated truck trips that were assumed to be potentially associated with disposal of construction debris at a landfill. This includes all trips by trucks categorized as Heavy Construction T7 that are likely to carry debris (flatbed, dump, and tractor)detailed in Chapter 22, *Air Quality and Greenhouse Gases* (Table 22B-13 of Appendix 22B, *Air Quality Assumptions*). Under this alternative, there would be an average of approximately 568 trips per day[26], or 994,311 trips over the 9-year construction period. One truck typically holds approximately 20 cubic yards of material. Therefore, an average of 11,368 cubic yards (8,179 tons[27]) of construction debris would be generated per day, totaling 212,782,509 cubic yards (153,203,406 tons) of construction debris over the 9-year construction period.

Of the estimated 153,203,406 tons of construction debris that would be generated under this alternative, it assumed that 142,479,167 tons would be divertible, and that at least 50% (or 76,601,703 tons) of construction waste would be diverted (in accordance with diversion requirements set forth by the State Agency Model IWMA). Therefore, after consideration of diversion requirements, the volume of construction debris that would require disposal at landfills represents 0.25% of the remaining permitted capacity of Plan Area landfills.

Overall, the construction waste that could be generated by implementing Alternative 9 would be similar to Alternative 1A, and would not adversely affect capacity of available landfills because it represents a negligible amount of the total remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal services would be needed. Further, at least 50% of construction waste would be diverted (diversion requirements set forth by the State Agency Model IWMA). Further, implementation of BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project specific construction debris recycling and diversion program to achieve a documented 50% diversion of construction waste. Construction of Alternative 9 would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There would be no adverse effect.

CEQA Conclusion: Based upon the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that construction of the proposed water conveyance facilities would not cause any exceedance of landfill capacity. This alternative is not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted capacity is associated with landfills with expected lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste disposal

[26] As provided in Chapter 22, *Air Quality and Greenhouse Gases*, it is assumed that each truck will make a maximum of 4 roundtrips (or 8 one-way trips). Based on the assumptions detailed in Tables 22B-5 through 22B-8 of Appendix 22B, there would be 600 heavy duty dump trucks associated with construction of Alternative 9, which would result in a maximum of 994,311 trips potentially associated with the disposal of construction debris at a landfill over the 9-year construction period. Although the truck trips during construction may not all be used for excavated material disposal, this number was used to provide a conservative estimate of the amount of excavated material that would be disposed.

[27] Conversion assumes 1 cubic yard of excavated material is approximately 0.72 ton.

services would be needed. Construction of Alternative 9 would not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. Therefore, there would be a less than significant impact on solid waste management facilities. No mitigation is required

Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: While utility facilities exist in the general location of water conveyance corridors under Alternative 9, construction activity would not be required at most utility crossings. Construction activities under Alternative 9 have the potential to interfere with five overhead power/ electrical transmission lines and one natural gas pipeline (Table 20-5). The conveyance alignment constructed under this alternative would cross or interfere with approximately 27 miles of agricultural delivery canals and drainage ditches, including approximately 8 miles on Victoria Island, 4 miles on Jones Tract, 4 miles on Coney Island, and 4 miles on Woodward Island. Additionally, approximately 370 irrigation and drainage facilities exist along the corridors used for water conveyance under this alternative. While some of these would not be affected by constructing Alternative 9, others lie in areas designated for dredging, levees, canals, siphons, pumping plants, and operable barriers. The potential exists for construction of the proposed conveyance facilities to cause disruptions to agricultural infrastructure in the Plan Area. Chapter 14, *Agricultural Resources,* addresses potential conflicts with existing agricultural irrigation and drainage facilities as a result of construction. Further, construction of project facilities would involve site grading, trenching, boring, and other excavation work. Ground disturbance has potential to damage utility infrastructure and disrupt delivery of utility services.

The potential damage and disruption to buried and overhead electrical transmission lines would be similar for telecommunications. Because relocation and disruption of existing utility infrastructure would be required under this alternative and would have the potential to create effects through the relocation of facilities, this alternative would result in an adverse effect on utilities.

Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of this effect. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the effect would not be adverse.

***CEQA Conclusion*:** Under this alternative, most features would avoid disrupting existing facilities by crossing over or under infrastructure. However, construction of facilities would conflict with existing utility facilities in some locations. Regional power transmission lines and one natural gas pipeline would possibly require relocation. Additionally, active gas wells may need to be plugged and abandoned. Because the relocation and potential disruption of utility infrastructure would be required, this impact is significant and unavoidable.

Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination with all appropriate utility providers and local agencies to integrate with other construction projects and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the impact could be less than significant.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Similar to Alternative 1A, the proposed water conveyance facilities under this alternative would be operated to provide diversions up to a total of 15,000 cfs from new north Delta intakes. Potential effects associated with operation and maintenance of water conveyance facilities would be similar to those described under Alternative 1A. For the purposes of this analysis, it was estimated that operations and maintenance would require approximately 120 workers (Table 20-2), including but not limited to maintenance, repair crew, pumping plant crew, and dewatering clue. Therefore, Alternative 9 would not result in physical effects associated with the provision of new or physically altered government facilities.

Because requirements for water and wastewater treatment under operations and maintenance of the water conveyance facilities would be primarily associated with intakes and intake pumping plant facilities, these effects would differ from those described under Alternative 1A because this alternative would build two fish-screened intakes, and would not include pumping plant facilities. Similar to Alternative 1A, these screens would require annual (or more frequent) pressure washing. Water needs related to restrooms, showers, and equipment cooling would be associated with two smaller pumping plants and potentially with control buildings constructed adjacent to operable barriers. Quantities of water needed for these purposes, however, would still be anticipated to be relatively small compared with municipal supplies. Additionally, water supplies and wastewater treatment services would potentially be provided by non-municipal facilities.

Similar to Alternative 1A, the operation and maintenance activities associated with the proposed water conveyance facilities are not expected to generate solid waste sufficient to increase demand for solid waste management providers in the Plan Area and surrounding communities. Unlike the intake structures associated with Alternative 1A, the two intake structures built as part of Alternative 9 would not require sedimentation basins or solids lagoons.

While improvements to the existing physical power transmission system are not anticipated to be necessary under Alternative 9, successful operation of the separate corridors would require relocation, disruption, and alteration of existing utilities. Two existing water intake structures are located on or connected to the proposed fish movement corridor. To minimize fish loss during operations, implementation of this alternative would require the Old River intake structure owned by the Contra Costa Water District to be decommissioned. In the absence of this intake, the water district may need to construct additional facilities to continue the diversion of current water supply volumes. Another pump station, which is owned and operated by the East Contra Costa Irrigation District, is located at the end of Dredge Cut off of Indian Slough near Discovery Bay. This facility would be evaluated for its potential impact on the fish movement corridor and may require relocation, which could trigger environmental effects.

Agricultural drainage facilities would also require modification in order to separate the Water Supply Corridors from the Fish Movement Corridors. Drainage facilities pumping along Middle River in Mandeville Island, Bacon Island, Woodward Island, and Victoria Island would need to relocate their discharge points from Middle River to Old River. Discharge outlets for drainage pumps along Middle River in Medford Island, McDonald Island, and Lower/Upper Jones Tract would need to be moved from Middle River to Whiskey Slough-Turner Cut and Stockton Deep Water Channel. Finally, drainage pumping along Victoria Canal in Union Island would need to relocate discharge outlets from Victoria Canal to Grant Line Canal. Because these modifications could create environmental effects, this impact would be considered adverse. Mitigation Measures UT-6a, UT-6b and UT-6c would be available to lessen the severity of this effect.

CEQA Conclusion: Operation and maintenance of the proposed conveyance facility would not result in physical impacts associated with the provision of new or physically altered government facilities due to the increased need for public services. While operation and maintenance of the water conveyance facilities under this alternative would require potable water and would produce wastewater, the volume of water needed and wastewater discharged are not anticipated to exceed capacity of existing facilities or require the alteration or expansion of water or wastewater treatment infrastructure. Construction and maintenance activities associated with the proposed water conveyance facilities would result in a less than significant impact on solid waste management facilities.

Under this alternative, operation of project facilities would conflict with existing utility facilities. Existing intakes would require decommissioning and potential relocation. Agricultural drainage ditches would need to relocate their discharge points. Because the relocation and potential disruption of utility infrastructure would be required this could create environmental impacts that would be considered significant. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce these effects, but not to a less than significant level. Overall, the impact on public services and utilities would be considered significant and unavoidable.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the Proposed CM2–CM11

NEPA Effects: Potential effects associated with the need to construct new government facilities to meet an increased need for public services resulting from the implementation of restoration conservation measures and those measures designed to reduce the effect of species-level stressors would be similar to those 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. Because the location for the implementation of conservation activities is not known at this point, it is not possible to determine whether the construction of conservation measures would require demolition and replacement of a government facility.

Effects on municipal water facilities from conservation measures would be similar to those for Alternative 1A. Some activities associated with these measures could require municipal water and wastewater treatment services; however, because the location and construction and operational details (i.e., water consumption and water sources associated with conservation measures) of these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain.

Potential effects associated with an increase in demand for solid waste management providers in the Plan Area and surrounding communities from solid waste generated by construction and operation of the proposed conservation measures would be similar to those described under Alternative 1A. Based on the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California, it is expected that construction and operation of the proposed conservation measures would not cause any exceedance of landfill capacity.

Conservation measures including habitat restoration and enhancement would be similar to those under Alternative 1A. The implementation of conservation measures could result in utility service disruption or possible damage to underground utilities. Similarly, the long-term conversion of existing utility corridors to habitat purposes could require the relocation of utility infrastructure, which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of these effects.

Potential effects of implementing conservation measures on law enforcement, fire protection and emergency response services within the ROAs would primarily involve demand for services related to construction site security and construction–related accidents. Because of the scale and duration of construction associated with implementing conservation measures, there could be an increased demand for public services. This effect would not be considered adverse with the implementation of environmental commitments described in Appendix 3B, *Environmental Commitments*. These environmental commitments have been incorporated into this alternative and would provide for onsite security at construction sites and minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation measures.

Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would be distributed across the study area. Implementing the proposed conservation measures would not result in potential effects associated with the need to construct new government facilities as a result of increased need for public services (i.e., law enforcement, fire protection, public schools).

The locations, construction, and operational details for these and other conservation measures have not been identified. Adverse effects due to the construction, operation and maintenance activities associated with the conservation measures are not expected to result in the need for new government facilities to provide public services or the need for new or expanded water or wastewater treatment facilities based on increased demand, or the potential for the disruption or relocation of utilities. Further, no substantive adverse effects to solid waste management facilities are anticipated. Potential effects of implementing conservation measures on law enforcement, fire

protection and emergency response services within the ROAs would not be adverse with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation measures. However, because the location and construction and operational details (i.e., water consumption and water sources associated with conservation measures) related to these facilities and programs have not yet been developed, the need for new or expanded water or wastewater treatment facilities is uncertain and this effect would be adverse.

***CEQA Conclusion*:** Implementation of the proposed conservation measures would not likely require alteration or construction of new government facilities due to increased need for public services and utilities. Several measures to reduce stressors on covered species could result in water supply requirements, but are not expected to require substantial increases in demand on municipal water and wastewater treatment services. Construction and operation activities associated with the proposed conservation measures would result in a less than significant impact on solid waste management facilities based upon the capacity of the landfills in the region, and the waste diversion requirements set forth by the State of California. Potential impacts of implementing conservation measures on law enforcement, fire protection and emergency response services within the ROAs would be less than significant with the incorporation of environmental commitments into this alternative and would minimize construction-related accidents associated with hazardous materials spills, contamination, and fires that may result from construction of the conservation measures. However, the location and construction and operational details (i.e., water consumption and water sources associated with conservation measures) of these facilities and programs have not yet been developed. Therefore, the need for new or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less than significant level. Therefore, this would be a significant unavoidable impact.

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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

20.3.3.17 Cumulative Analysis

Assessment Methodology

This cumulative effects analysis considers the incremental effects on public services or utilities as a result of the no action and action alternatives in the Plan Area, when taking into consideration past, present, and reasonably foreseeable future projects. For this analysis, the projects considered are

listed in Table 20-6, Public Services and Utilities Effects of Plans, Policies, and Programs Considered for Cumulative Analysis. This list has been drawn from a more substantial compilation of past, present, and reasonably foreseeable programs and projects included in Appendix 3D, *Defining Existing Conditions, the No Action/No Project Alternative, and Cumulative Impact Conditions*.

Table 20-6. Public Services and Utilities Effects of Plans, Policies, and Programs Considered for Cumulative Analysis

Agency	Program/ Project	Status	Description of Program/Project	Public Services and Utilities Effects
California High Speed Rail Authority	The Altamont Corridor Rail Project	Planning; Alternative Analysis	Project would provide a dedicated passenger rail connection between northern San Joaquin Valley and the San Francisco Bay Area via the Altamont Pass.	Current alternative alignments are located west of Interstate 5 in Stockton and near Tracy. Unlikely to result in effects on services and utilities within the Plan Area.
Department of Water Resources	North Delta Flood Control and Ecosystem Restoration Project	Final EIR completed in 2010	Project implements flood control and ecosystem restoration benefits in the north Delta	Less than significant effects on public services and utilities
Freeport Regional Water Authority and Bureau of Reclamation	Freeport Regional Water Project	Project was completed late 2010. Estimated completion of water treatment plant in 2012	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	No public services and utilities effects identified
Bureau of Reclamation	Delta-Mendota Canal/ California Aqueduct Intertie	Program under development. Final EIS/EIR in 2009. ROD in 2009	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	No adverse effects on public services and utilities identified
Bureau of Reclamation, California Department of Water Resources	South Delta Improvements Program	Ongoing program. Final EIR/EIS 2006	Project to increase water levels and improve circulation patterns and water quality while improving operational flexibility of the State Water Project	No public services and utilities effects identified

Agency	Program/ Project	Status	Description of Program/Project	Public Services and Utilities Effects
California Department of Water Resources	Temporary Barriers Project 2001–2007	Mitigated Negative Declaration 2000	Project to seasonally install up to three rock flow control structures and one rock fish control structure in south Delta channels at various times during a seven-year period (2001–2007), or until permanent flow control structures are constructed. Purpose is to protect San Joaquin salmon migrating through the Delta and provide an adequate agricultural water supply in terms of quantity, quality, and channel water levels to meet the reasonable and beneficial needs of water users in the South Delta Water Agency.	Less than significant effects on public services and utilities
Bureau of Reclamation, USFWS, California Department of Fish and Wildlife	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.	The following significant impacts on utilities were identified: • Damage to Pipelines and/or Disruption of Electrical, Gas, or Other Energy Services during Construction or Restoration Activities • Damage to Utility Facilities or Disruption to Service as a Result of Restoration Determined less than significant after mitigation.

Demand for public services, such as law enforcement, fire protection, and medical services are expected to change as a result of past, present, and reasonably foreseeable future projects, and typically increase in correlation with population growth and changes in economic activity in the region. Cumulative effects related to public services and utilities may also result from past, present, and reasonably foreseeable future projects that cause disruption to utility services and/or conflict with a public facility (i.e., physically traverse such a facility).

The following list of ongoing and reasonably foreseeable future projects were reviewed for their potential for effects on public services and utilities, that when considered with the alternatives, may result in cumulative effects.

In addition to the ongoing and reasonably foreseeable future projects listed in Table 20-6, development projects and other projects implemented under city and county general plans within the Plan Area may result in effects to public services and utilities.

No Action Alternative

The cumulative effect of the No Action Alternative combined with other local and regional projects as presented in Table 20-6 would be minor because of the limited development allowed in the Delta primary zone. Public services such as law enforcement, fire protection, emergency response services, public medical services, public schools, libraries, or other services would operate and expand as needed to appropriately serve the Plan Area in accordance with applicable general plans and local, state, and federal laws pertaining to service levels. Continued implementation of SWP/CVP operations, maintenance, enforcement, and protection programs by federal, state, and local agencies and non-profit groups, as well as projects that are permitted or under construction, would include typical design and construction practices to avoid or minimize potential impacts on public services and utility systems, and are not expected to be adverse.

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. For major earthquakes along larger faults, ground rupture can extend for considerable distances (hundreds or thousands of feet), with associated risks for surface and subsurface structures such as buildings and utilities (e.g., gas or water pipelines). See Appendix 3E, *Potential Seismic and Climate Change Risks to SWP/CVP Water Supplies* for more detailed discussion. In instances of a catastrophic event due to climate change or a seismic event, there would also be a potential for adverse effect to public services (such as emergency response) and facilities (such as hospitals). 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 20-6.

Impact UT-9: Cumulative Effects on Public Services and Utilities from Construction Activities Occurring Within the Delta

NEPA Effects: Implementation of the BDCP and other local and regional projects as presented in Table 20-6, could contribute to regional impacts on public services and utilities.

Public Services

Construction activities associated with Alternatives 1A through 9 could increase demand for public services in the Plan Area to a degree that new government facilities are needed to meet additional needs. Alternatively, construction activities could require relocation of existing government facilities. Construction or relocation of these facilities would be adverse due to resulting environmental effects.

Other past, present, and probable future projects and programs in the region that are identified in Table 20-6 and Appendix 3D, *Defining Existing Conditions, the No Action/No Project Alternative, and Cumulative Impact Conditions* have the potential to adversely affect public services. As detailed in Chapter 16, *Socioeconomics*, growth rates from 2000 to 2008 were generally higher in the smaller communities of the Plan Area than in larger cities such as Antioch and Sacramento. Further, growth

projections through 2060 indicate that all counties overlapping the Delta, except for Sacramento County, are projected to grow at a faster rate than the state as a whole. Total population in the Delta counties is projected to grow at an average annual rate of 0.9% through 2030 (California Department of Finance 2007). The historic trend of limited development allowed in the Delta primary zone would likely continue, and the limited future growth would minimize the potential effects related to disruption to existing public services and conflicts with public facilities and utilities.

Although the BDCP alternatives are not expected to result in adverse effects on public services and utilities as a result of increased demands for services and utilities from population growth, when combined with projects listed above that may generate additional demand on public services and utilities, there could be a cumulative effect on public services and utilities. However, the projects and types of projects listed above would be required to be consistent with specific goals, objectives, policies, and implementation measures of the respective county's general plan where the project or development is proposed. The county general plans, as described under the Regulatory Setting of this chapter provide guidance and regulation for the provision of public services and utilities within the respective jurisdiction. Though past, current, and future projects may result in additional demands on public services and utilities, the regulatory framework that governs each county within the Plan Area is expected to mitigate any potential adverse effects on service levels and disruption to such services. There would be no cumulative effect on public services as a result of increased demand.

The projects in Table 20-6 may also result in demolition of a public facility, which could require replacement of the facility, the construction of which could cause significant environmental effects. As discussed previously under the discussion of the BDCP alternatives, any alternative that includes construction of the conveyance pipeline between Intake 3 and the Intermediate Forebay (Alternatives 1A, 2A, 4, 6A, 7, and 8) (Figure 20-5) or construction of the canal segment and bridge (Alternatives 1B, 2B, and 6B) (Figure 20-6), would conflict with and potentially require removal of the Hood Fire Station. Because none of the projects listed in Table 20-6 are known to require relocation or construction of a public facility, BDCP's incremental contribution to the adverse cumulative effect on public services is significant.

Implementation of Mitigation Measure UT-2 would lessen this effect by requiring coordination with the Courtland Fire Protection District through final project design regarding potential relocation of the Hood Fire Station, and the provision of a suitable permanent facility prior to any activities that would disrupt fire protection in its service area within the Courtland Fire Protection District. However, because the effects of constructing a new fire station are unknown, this effect would remain adverse.

Consequently, Alternatives 1A, 1B, 2A, 2B, 4, 6A, 6B, 7 and 8 would contribute to a cumulatively considerable adverse effect on public services. Alternatives 1C, 2C, 3, 5, 6C and 9 would not have a cumulatively adverse effect on public services.

Utilities

Construction activities could have an adverse effect on water, wastewater and solid waste facilities. Additionally, construction activities associated with BDCP (e.g., site grading, trenching, ground disturbing activities) could result in the unintentional damage to or disruption of underground utilities. Disruption of certain utilities, such as natural gas pipelines, could result in public health hazards (e.g., explosions). Construction could also result in damage to or disruption of overhead

utilities when establishing electrical interconnection of the project to the electric grid. Other past, present, and probable future projects and programs in the region that are identified in Table 20-6 and Appendix 3D, *Defining Existing Conditions, the No Action/No Project Alternative, and Cumulative Impact Conditions* have the potential to adversely affect utilities as well and create a cumulative effect.

Construction of BDCP Alternatives 1A through 9 is not expected to have any adverse effect on water, wastewater and solid waste facilities. None of the projects listed in Table 20-6 are known to have any adverse effect on water, wastewater and solid waste facilities. Therefore, there would be no cumulative effect on these utilities.

However, Alternatives 1A through 9 would require the relocation and disruption of utility infrastructure, including existing water, sewer, storm drain, natural gas, oil, electric, and/or communication lines, and would have the potential to create adverse effects through the relocation of facilities. Because the relocation and potential disruption of utility infrastructure would be required and could create environmental impacts, this effect would be adverse. Other past, present, and probable future projects and programs in the region that are identified in Table 20-6 and Appendix 3D, *Defining Existing Conditions, the No Action/No Project Alternative, and Cumulative Impact Conditions* have the potential to result in relocation and disruption of utility infrastructure.

The Suisun Marsh Habitat Management, Preservation, and Restoration Plan would damage utility facilities during construction and restoration activities. However, mitigation was able to reduce it to less than significant. Because no other projects are known to result in relocation and disruption of utility infrastructure and the Suisun Marsh Habitat Management, Preservation, and Restoration Plan was able to reduce this effect to not adverse through mitigation measures, BDCP's incremental contribution to the adverse cumulative effect on utilities is significant.

Implementation of Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce the severity of this effect, but the effect would remain adverse. Consequently, Alternatives 1A through 9 would contribute to a cumulatively considerable adverse effect on utilities.

Overall, Alternatives 1A, 1B, 2A, 2B, 4, 6A, 6B, 7 and 8 would contribute to a cumulatively considerable adverse effect on public services. All action alternatives would have a cumulatively considerable adverse effect on utilities.

***CEQA Conclusion*:** All action alternatives would require the relocation and disruption of utility infrastructure, including existing water, sewer, storm drain, natural gas, oil, electric, and/or communication lines, and would have the potential to create significant impacts through the relocation of facilities. As such, the contribution of cumulative impacts under Alternatives 1A through 9 is considerable. Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce the severity of this impact, but would remain cumulatively considerable.

The potential conflict with the Hood Fire Station as a result of implementation of Alternative 1A, 1B, 2A, 2B, 4, 6A, 6B, 7, or 8 is considered a significant and unavoidable impact because the effects of constructing a new fire station are unknown at this time. Mitigation Measure UT-2 would be available to lessen the severity of the potential impact by ensuring continuation of fire protection services in the Courtland Fire Protection District service area, which is shared with the Courtland Fire Station. However, this impact would remain cumulatively considerable.

Mitigation Measure UT-2: Ensure the Continuation of Fire Protection Services by the Courtland Fire Protection District

Please see Mitigation Measure UT-2 under Impact UT-2 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.

Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or Minimizes Any Effect on Operational Reliability

Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

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.

20.4 References Cited

20.4.1 Printed References

Alameda County. 2000. *East County Area Plan*. Oakland, CA. Adopted May 1994. Modified by passage of Measure D, effective December 22, 2000. Oakland, California. December 2000. Available: <http://www.acgov.org/cda/planning/generalplans/>. Accessed: January 12, 2012.

Burr Consulting. 2009. *Municipal Service Review: Fire and Emergency Medical Service Providers*. Prepared for Contra Costa Local Agency Formation Commission.

California Department of Education. 2009. *DataQuest*. Factual information on enrollment numbers for California schools and districts. Available: <http://www.edsource.org/data_cde-guide.html>. Accessed: June 29, 2009

California Department of Finance. 2007. *Population Projections for California and Its Counties 2000-2050, by Age, Gender and Race/Ethnicity.* July. Sacramento, CA. <http://www.dof.ca.gov/research/demographic/reports/projections/p-3/>. Accessed: June 30, 2009.

California Integrated Waste Management Board. 2006. *Targeted Statewide Waste Characterization Study: Detailed Characterization of Commercial Self-Haul and Drop-Box Waste*. June. Sacramento, CA. Prepared by Cascadia Consulting Group.

———. 2009a. *LEA Information*. Available: <http://www.ciwmb.ca.gov/LEACentral/LEADirectory/>. Accessed: June 24, 2009.

———. 2009b. *Tiered Regulatory Placement Criteria*. Available: <http://www.ciwmb.ca.gov/LEACentral/Regs/Tiered/TierChart.htm>. Accessed: June 24, 2009.

California Department of Resources Recycling and Recovery (CalRecycle). 2012. *Solid Waste Information System*. Available: <http://www.calrecycle.ca.gov/SWFacilities/Directory/>. Accessed: July 25, 2012.

California Office of Statewide Health Planning and Development. 2009. *Health Facilities*. Available: <http://www.oshpd.ca.gov/FDD/index.html>. Accessed: June 24, 2009.

City of Oakley. 2002. *City of Oakley 2020 General Plan*. Oakley, California. Adopted December 16, 2002. Amended January 26, 2010. Available: <http://www.ci.oakley.ca.us/subpage.cfm?id=572363>. Accessed: December 14, 2011.

City of Sacramento. 2009. *Sacramento 2030 General Plan*. Adopted March. Available: <http://www.sacgp.org/>. Accessed: December 14, 2011.

City of Stockton. 2007. *Stockton General Plan 2035 Goals and Policies Report*. December 2007. Available: <http://www.stocktongov.com/government/departments/communityDevelop/cdPlanGen.html>. Accessed: December 14, 2011.

City of Tracy. 2011. *City of Tracy General Plan*. February. Available: <http://www.ci.tracy.ca.us/?navid=562>. Accessed: December 13, 2011.

Contra Costa County. 2005. *Contra Costa County General Plan 2005–2020*. Contra Costa County Community Development Department, Martinez, CA. Available: <http://www.co.contra-costa.ca.us/depart/cd/current/advance/GeneralPlan.htm>. Accessed: February 11, 12, and 13, 2009; April 16, 2010; January 24, 2012.

County of Yolo. 2009. *Yolo County 2030 Countywide General Plan*. November 10. Woodland, California. Available: <http://www.yolocounty.org/Index.aspx?page=1965>. Accessed: February 8, 2012.

Delta Protection Commission. 1995. *Land Use and Resource Management Plan for the Primary Zone of the Delta*. Available: <http://www.delta.ca.gov/Land%20Use%20and%20Resource%20Management%20Plan%20for%20the%20Prim.htm>. Accessed: October 21, 2011.

Kahn/Mortimer/Associates and Dyett & Bhatia. 2010. *Castro Valley Area Plan. Chapter 9 Public Services and Utilities*. Revised Draft. July. Prepared for the Alameda County Community Development Agency. Available: <http://www.castrovalleygeneralplan.org/plan_docs.htm>. Accessed: February 8, 2012.

Sacramento County. 2011. *Sacramento County General Plan of 2005–2030*. Amended and Adopted November 9. Community Planning and Development Department. Sacramento, CA. Available: <http://www.msa2.saccounty.net/planning/Pages/GeneralPlan.aspx>. Accessed: February 2, 2011.

San Joaquin County. 1992a. *Countywide General Plan 2010. Volume I, Chapter IV. Community Development.* Amended 2005, 2010. Community Development Department, Stockton, CA. Available: <http://www.sjgov.org/commdev/cgi-bin/cdyn.exe?grp=planning&htm=generalplan>. Accessed: February 11, 12, and 13, 2009; February 8, 2012.

———. 1992b. *Countywide General Plan 2010. Volume I, Chapter V. Public Health and Safety*. Amended 2005, 2010. Community Development Department, Stockton, CA. Available: <http://www.sjgov.org/commdev/cgi-bin/cdyn.exe?grp=planning&htm=generalplan>. Accessed: February 11, 12, and 13, 2009; February 8, 2012.

San Joaquin Local Agency Formation Commission. 2011. *Final Municipal Service Review. Rural Fire Protection Districts San Joaquin County*. October. Stockton, CA. Available: <http://www.co.san-joaquin.ca.us/lafco/municipal_service_reviews_adopte.htm>.

Solano County. 2008. *Solano County General Plan*. December. Fairfield, CA. Available: <http://www.co.solano.ca.us/depts/rm/planning/general_plan.asp>. Accessed: February 11, 12, and 13, 2009; January 17, 2012.