

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

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

3 **20.1.1 Potential Environmental Effects Area**

4 The study area evaluated for potential effects on public services and utilities includes the Plan Area
5 and the Areas of Additional Analysis. See Chapter 1, *Introduction*, for a detailed description of the
6 Plan Area (Figure 1-4). The Areas of Additional Analysis are two areas outside the defined Plan Area
7 that encompass potential power transmission corridors. One area lies west of the Plan Area and is
8 considered in analysis of proposed BDCP alternatives that include the West Alignment (Alternatives
9 1C, 2C, and 6C). The other area lies east of the Plan Area and represents one of two potential
10 transmission line alignments for Alternative 4.

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

19 **20.1.1.1 Public Services**

20 **Law Enforcement**

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

32 Response times for the law enforcement agencies vary according to the size of patrol area, density of
33 the population served, distance to the call area, traffic congestion, and call volume. Most law
34 enforcement agencies have a staffing goal of 1.5 officers per 1,000 persons. Table 20A-1 in Appendix
35 20A identifies law enforcement facilities and stations within 1 mile of the Plan Area, the staffing
36 goals, and average response times for each agency. Of the twenty-six law enforcement agencies
37 identified in the Plan Area, seven have staffing goals of less than 1.5 officers per 1,000 persons, while
38 four identify staffing goals that exceed the standard. The law enforcement facilities in the Plan Area
39 are shown on Figure 20-1.

1 Fire Protection and Emergency Response

2 Fire protection and emergency response in the Plan Area, as throughout the state of California, is
 3 provided by a variety of public and private entities. Communities within the Plan Area are provided
 4 fire protection, rescue, and emergency services by a combination of fire protection entities including
 5 cities, counties, fire protection districts¹ (FPD), volunteer fire departments, and supplemental
 6 services provided by the state. Portions of outlying areas of the Plan Area receive fire protection
 7 from the California Department of Forestry and Fire Protection (CAL FIRE). This state agency
 8 provides emergency services, fire, medical, rescue, and disaster relief throughout California. While
 9 CAL FIRE does not have any fire stations within the Delta (other than the Office of the State Fire
 10 Marshal), the agency does assist with emergencies in the unincorporated communities and State
 11 Responsibility Areas from the Sonoma/Lake/Napa Unit and the Santa Clara Unit (North Coast
 12 Region I) as well as the Amador/El Dorado Unit and Tuolumne/Calaveras Unit (Central Sierra
 13 Region IV).

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

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

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

31 Response times assist in measuring distribution of new fire stations and the adequacy of fire
 32 protection throughout a given service area. In determining the best location for fire facilities within
 33 each county, response times are one of the most important determinants. Response times depend on
 34 a number of factors, including traffic circulation, development, population growth, and geographic
 35 distance. Response time is broken into three components: alarm processing time (dispatch), turnout
 36 time, and travel time. The element of time for alarm processing is in the hands of the dispatch and
 37 communication system. The amount of time it takes to turnout fire apparatus is different depending
 38 on whether the station is staffed by full-time permanent or otherwise assigned personnel, or
 39 whether the staffing is recalled (volunteer). Travel time is a function of speed and the availability of
 40 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.

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

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

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

18 Emergency response is often coordinated directly through each county office of emergency services
 19 or other similar emergency management dispatch entity. Frequently, emergency ambulance services
 20 are contracted to private ambulatory companies and other privately owned entities under mutual
 21 aid agreements to provide emergency services throughout a given area. Such private providers work
 22 closely with local jurisdictions and fire protection entities. Chance of survival is often related to how
 23 quickly a patient receives medical attention. The Center for Public Safety Excellence recommends a
 24 50-second dispatch time at least 90% of the time. Additional time is factored in for response once
 25 dispatch communicates the emergency to the responder. Ambulance response time standards in
 26 individual communities are based on the urban or rural character of the area. Ambulance response
 27 times typically allow several additional minutes in rural areas compared to urban. This section
 28 identifies each fire protection entity throughout the Plan Area; however, private emergency
 29 ambulance providers are not identified.

30 **Hospitals**

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

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

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

3 **Public Schools**

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

17 **Libraries**

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

25 **20.1.1.2 Utilities**

26 **Solid Waste Management**

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

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

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

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

19 **Wastewater Management**

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

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

32 A total of 21 wastewater treatment facilities serving the Plan Area have been identified. Appendix
33 20A, Table 20A-7 lists addresses and services for each facility.

34 **Water Supply and Water Treatment**

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

1 **Electricity and Natural Gas**

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

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

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

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

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

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

36 **Communications**

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

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

3 **20.2 Regulatory Setting**

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

6 **20.2.1 Federal Plans, Policies, and Regulations**

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

18 **20.2.1.1 Public Services**

19 **Fire Protection and Emergency Response**

20 **National Fire Protection Association 1710 Standard**

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

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

34 The National Fire Protection Association 1710 Standard for the Organization and Deployment of
35 Fire Suppression Operations is used as the "best practice" for determining appropriate initial
36 response of fire suppression resources. This standard requires the initial response (4 firefighters)
37 within 5 minutes, 90% of the time, and a full effective fire force (15 firefighters) within 9 minutes,
38 90% of the time. Response times in the Plan Area meet the National Standard.

1 **National Fire Protection Association 1720 Standard**

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

12 **20.2.1.2 Utilities**

13 **Electricity and Natural Gas**

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

18 **20.2.2 State Plans, Policies, and Regulations**

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

23 **20.2.2.1 Public Services**

24 **Fire Protection and Emergency Response**

25 **Health and Safety Code Sections 13145 and 13146**

26 CAL FIRE provides wildland fire protection and implements the State Fire Marshal's regulations. The
 27 State Fire Marshal is apart from CAL FIRE executive staff. California Health and Safety Code Sections
 28 13145 and 13146 authorize, with some exceptions, local fire chiefs, or their designees, to enforce
 29 State Fire Marshal regulations. The fire chief can appoint a full-time building official as an authorized
 30 representative; however, the ultimate responsibility lies with the fire chief. CAL FIRE employs law
 31 enforcement officers that investigate fires, issue citations, and assist local fire and law enforcement
 32 agencies in arson, bomb, fireworks, and fire extinguisher investigations, as requested (California
 33 Health and Safety Code [Sections 13145 and 13146] 2009).

34 **Health and Safety Code, Section 13801**

35 Fire districts are formed and regulated pursuant to the California Health and Safety Code, Section
 36 13801 et seq., also known as the Fire Protection District Law of 1987. The enabling legislation
 37 authorizes fire districts to provide fire protection, ambulance, and rescue services. Recognizing that

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

3 **Public Resources Code Section 4125**

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

11 **Hospitals**

12 **Office of Statewide Health Planning and Development**

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

20 **Public Schools**

21 **California Department of Education Standards**

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

28 **20.2.2.2 Utilities**

29 **Land Use and Resource Management Plan for the Primary Zone of the Delta—** 30 **Utilities and Infrastructure Section**

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

- 36 • Part I, an introduction that describes the program and objectives.
- 37 • Part II, findings and policies, and recommendations for local governments, state agencies, or
38 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

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

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

12 **Energy**

13 **California Energy Commission**

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

- 16 ● Forecast future energy needs.
- 17 ● License thermal power plants 50 megawatts or larger.
- 18 ● Promote energy efficiency.
- 19 ● Support public interest energy research.
- 20 ● Support renewable energy.
- 21 ● Administer grant funding.
- 22 ● Plan for and respond to energy emergencies.

23 **California Public Utilities Commission**

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

29 **Solid Waste Management**

30 **The California Integrated Waste Management Act**

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

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

3 The following local enforcement agencies serve the Plan Area.

- 4 • Alameda County: Environmental Health Department.
- 5 • Contra Costa County: Environmental Health Division.
- 6 • Sacramento County: Environmental Management Department
 - 7 ○ City of Pittsburg: Solid Waste Management Department.
- 8 • San Joaquin County: Environmental Health Department
 - 9 ○ City of Stockton: CalRecycle Enforcement Agency.
- 10 • Solano County: Department of Resource Management.
- 11 • Yolo County: County Health Department—Environmental Health.

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

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

28 **20.2.3 Regional and Local Plans, Policies, and Regulations**

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

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

1 **20.2.3.1 County General Plans**

2 **Alameda County General Plan**

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

6 **Law Enforcement**

7 The median emergency response time for all Alameda County law enforcement service providers is
8 4:25 minutes and the staffing level is approximately 1.6 county police service providers per 1,000
9 residents (Kahn/Mortimer/Associates et al. 2010:9-10).

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

16 **Fire Protection and Emergency Response**

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

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

28 **Libraries**

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

31 **Solid Waste Management**

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

35 **Wastewater Management**

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

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

3 **Water Supply and Water Treatment**

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

7 **Utilities**

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

10 **Contra Costa County General Plan**

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

15 **Law Enforcement**

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

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

28 **Fire Protection and Emergency Response**

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

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

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

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

9 **Public Schools**

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

13 **Libraries**

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

18 **Solid Waste Management**

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

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

31 **Wastewater Management**

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

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

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

6 **Water Supply and Water Treatment**

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

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

20 **Sacramento County General Plan**

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

24 **Law Enforcement**

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

31 **Fire Protection and Emergency Response**

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

1 Public Schools

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

6 Libraries

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

10 Solid Waste Management

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

16 Wastewater Management

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

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

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

36 Water Supply and Water Treatment

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

1 **Energy**

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

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

14 **San Joaquin County General Plan**

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

18 **Law Enforcement**

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

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

27 **Fire Protection and Emergency Response**

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

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

34 **Public Schools**

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

1 Libraries

2 With the expected increase in population in the next decade, and the limitations of public funds, the
3 major challenge for the library system will be to continue to provide the existing level of service to
4 its patrons. Libraries are addressed in the Community Development chapter, Public Facilities—
5 Library Facilities and Services section of the general plan. The general plan establishes goals and
6 policies to ensure adequate public library facilities and services for the county (San Joaquin County
7 1992a:IV-124).

8 Solid Waste Management

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

13 Wastewater Management

14 Presently, all the community treatment facilities in San Joaquin County are operating at or very near
15 capacity. Most of the smaller wastewater treatment plants in the county are or will be operating at
16 capacity when existing commitments for service are filled. The Community Development chapter,
17 Infrastructure Services—Wastewater Treatment section of the general plan establishes goals and
18 policies for the collection and treatment of wastewater in the county (San Joaquin County 1992a:IV-
19 102-IV-104).

20 Water Supply and Water Treatment

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

24 Utility Corridors (Energy and Communications)

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

29 The general plan adopts policies requiring that the environmental assessment of new or expanded
30 utility lines must address the potential adverse effects on development as a result of a rupture or
31 malfunction, and must identify mitigation measures to be adopted by the utility to safeguard against
32 such accidents and to respond in the event of an accident. Additionally, the County will encourage
33 the use of existing transmission corridors for new lines, except in the case of electrical transmission
34 lines over 500 kV, which for safety reasons are to be separated from existing corridors by at least
35 500 yards. Utilities proposing to expand existing transmission or communications lines must
36 coordinate with the County.

1 **Solano County General Plan**

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

5 **Law Enforcement**

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

11 **Fire Protection and Emergency Response**

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

16 **Public Schools**

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

23 **Libraries**

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

32 **Solid Waste Management**

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

1 **Wastewater Management**

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

5 **Water Supply and Water Treatment**

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

11 **Utilities**

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

19 **Yolo County General Plan**

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

23 **Law Enforcement**

24 In 2008, Yolo County had an average of 3.9 sworn officers per 1,000 people. This was a decrease
25 from 2006, where Yolo County had a ratio of 4.0 sworn officers per 1,000 people. Nationwide, the
26 ratio was 2.4 sworn officers per 1,000 people. Yolo County experiences a low rate of crime, including
27 violent crimes. In support of the goal to enhance public safety to prevent crime and improve
28 neighborhood relations, the County has adopted several policies (County of Yolo 2009:PF-17–PF-
29 19).

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

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

4 **Fire Protection and Emergency Response**

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

12 **Public Schools**

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

17 **Libraries**

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

- 24 • Meet the following minimum standards for new and existing libraries: 2.875 volumes per capita,
25 with a minimum collection of 6,000 volumes;
 - 26 ○ 0.75 to 1.0 square feet of library space per capita, with a minimum size of 1,000 square feet;
 - 27 ○ 3,000 audio and video recordings per branch library;
 - 28 ○ 10 magazine and newspaper subscriptions per 1,000 residents;
 - 29 ○ 2.5 reader seats per 1,000 residents;
 - 30 ○ One computer per 750 to 1,250 residents (minimum 10 computer workstations per branch
31 library);
 - 32 ○ Trained staff to provide visitor-focused library programs and services (Action PF-A38).

33 **Solid Waste Management**

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

1 **Wastewater Management**

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

8 **Water Supply and Water Treatment**

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

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

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

25 **Utilities**

26 The Utilities and Communication Technology section of the Public Facilities & Services chapter of
 27 the General Plan addresses power generation and transmission, as well as information systems such
 28 as telephone and wireless communications. The Plan requires underground utilities in new
 29 development within unincorporated communities, where feasible and requiring utility lines and
 30 pipelines to be installed in ways that avoid conflicts with agricultural operations (County of Yolo
 31 2009:PF-43–PF-47).

32 **20.2.3.2 City General Plans**

33 **City of Tracy General Plan**

34 **Law Enforcement**

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

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

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

8 **Fire Protection and Emergency Response**

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

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

19 **Libraries**

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

26 **Solid Waste Management**

27 The Tracy General Plan contains policies regarding reduction in solid waste through recycling and
28 resource conservation, and ensuring adequate solid waste disposal services (City of Tracy 2011:7-
29 19).

30 **Wastewater Management**

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

35 **Water Supply and Water Treatment**

36 The Tracy General Plan contains objectives and policies generally stating that the City shall meet the
37 demands of future development with adequate water supply and infrastructure. Policies also state
38 that the City shall establish water demand reduction standards for new development (City of Tracy
39 2011:7-25).

1 **Utilities**

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

4 **City of Oakley General Plan**

5 **Law Enforcement**

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

11 **Fire Protection and Emergency Response**

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

19 **Libraries**

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

23 **Solid Waste Management**

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

26 **Wastewater Management**

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

31 **Water Supply and Water Treatment**

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

1 **Utilities**

2 The Oakley 2020 General Plan does not address utilities.

3 **City of Stockton General Plan**

4 **Law Enforcement**

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

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

14 **Fire Protection and Emergency Response**

15 The Stockton Fire Department (SFD) serves the City of Stockton and its surrounding unincorporated
16 area. The SFD maintains 13 locations dispersed throughout the general plan Planning Area. The SFD
17 has 287 line suppression personnel. The ratio of firefighters to population served is 0.91 firefighters
18 per 1,000 population. All 287 personnel are certified as emergency medical technicians (EMT), with
19 111 firefighters certified to EMT-Paramedic level. The Department is also supported by 38 civilian
20 employees. The 2035 General Plan Goals and Policies Report contains policies primarily geared
21 toward addressing growth from residential development. In general, the city has policies that will
22 provide necessary fire and emergency response facilities and personnel to meet residential and
23 employment growth in the area. As with law enforcement, the city requires new developments to
24 pay their fair share of the costs for providing fire protection services (City of Stockton 2007:9-13).

25 **Libraries**

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

30 **Solid Waste Management**

31 The 2035 General Plan contains policies regarding reduction in solid waste through recycling and
32 resource conservation, and ensuring adequate solid waste disposal services (City of Stockton
33 2007:9-11).

34 **Wastewater Management**

35 The 2035 Stockton General Plan contains policies that include the need for proper facility sizing to
36 meet long-term needs, wastewater reuse, and protection of critical infrastructure (City of Stockton
37 2007:9-8).

1 Water Supply and Water Treatment

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

6 Utilities

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

11 City of Sacramento General Plan**12 Law Enforcement**

13 The Public Health and Safety Element contains policies that the City will maintain adequate police
14 staffing, performance levels, and facilities to serve existing population and future growth. Policies
15 also ensure that new developments will pay their fair share of the costs for providing police services,
16 and promote coordination between land use planning and law enforcement (City of Sacramento
17 2009:2-275).

18 Fire Protection and Emergency Response

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

24 Libraries

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

28 Solid Waste Management

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

32 Wastewater Management

33 The Sacramento 2030 General Plan Environmental Resources Element contains policies that provide
34 for adequate and reliable sewer service by requiring master planned infrastructure for new
35 developments to meet ultimate capacity needs and avoid future replacement (City of Sacramento
36 2009:2-227).

1 **Water Supply and Water Treatment**

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

5 **Utilities**

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

9 **20.3 Environmental Consequences**

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

16 **20.3.1 Methods for Analysis**

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

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

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

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

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

9 **20.3.1.1 Public Services**

10 **Law Enforcement**

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

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

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

29 **Fire Protection**

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

33 **Hospitals**

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

1 **Schools**

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

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

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

30 **Libraries**

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

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

36 **20.3.1.2 Utilities**

37 **Solid Waste Management**

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

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

8 **Water Services**

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

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

18 **Wastewater Services**

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

22 **Electricity and Natural Gas**

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

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

33 **Communications**

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

1 **20.3.2 Determination of Effects**

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

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

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

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

32 With the exception of the No Action Alternative and Alternative 9, each action alternative would
33 involve construction of conveyance facilities for diverting water from the north Delta south to the
34 existing SWP and CVP south Delta export facilities. The alternatives differ primarily in their physical
35 conveyance facility infrastructure, the locations of facilities, and diversion capacities (ranging from
36 3,000 to 15,000 cubic feet per second [cfs]). Other differences are associated with operational
37 criteria for water supply facilities, habitat conservation measures, and measures to reduce the
38 effects of other stressors on covered species. Specifically, the range of alternatives includes different
39 amounts and types of habitat restoration and enhancement proposed under CM4–CM11. Other

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

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

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

22 **20.3.2.1 Compatibility with Plans and Policies**

23 Constructing the proposed water conveyance facility (CM1) and implementing CM2–CM22 could
24 potentially result in incompatibilities with plans and policies related to public services and utilities.
25 Section 20.2, *Regulatory Setting*, provides an overview of federal, state, regional and agency-specific
26 plans and policies applicable to public services and utilities. This section summarizes ways in which
27 BDCP is compatible or incompatible with those plans and policies. Potential incompatibilities with
28 local plans or policies, or with those not binding on the state or federal governments, do not
29 necessarily translate into adverse environmental effects under NEPA or CEQA. Even where an
30 incompatibility “on paper” exists, it does not by itself constitute an adverse physical effect on the
31 environment, but rather may indicate the potential for a proposed activity to have a physical effect
32 on the environment. The relationship between plans, policies, and regulations and impacts on the
33 physical environment is discussed in Chapter 13, *Land Use*, Section 13.2.3.

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

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

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

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

12 **20.3.3 Effects and Mitigation Approaches**

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

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

22 **20.3.3.1 No Action Alternative**

23 **NEPA Effects:** The No Action Alternative describes expected future conditions resulting from a
 24 continuation of existing policies and programs by federal, state, and local agencies in the absence of
 25 the BDCP alternatives as of the year 2060. As described in Chapter 3, *Description of Alternatives*,
 26 Section 3.5.1, the No Action Alternative assumptions are limited to existing conditions, programs
 27 adopted during the early stages of development of the EIR/EIS, facilities that are permitted or under
 28 construction during the early stages of development of the EIR/EIS, and foreseeable changes in
 29 development that would occur with or without the BDCP. Climate change that would occur with or
 30 without the BDCP is also part of the No Action Alternative.

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

1 **Table 20-1. Effects on Public Services and Utilities from the Plans, Policies, and Programs for the No**
 2 **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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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

1

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

9 **Demand on Public Services and Utilities**

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

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

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

8 **Displacement of Public Facilities**

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

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

20 **Catastrophic Seismic Risks**

21 The Delta and vicinity are within a highly active seismic area, with a generally high potential for
22 major future earthquake events along nearby and/or regional faults, and with the probability for
23 such events increasing over time. Based on the location, extent and non-engineered nature of many
24 existing levee structures in the Delta area, the potential for significant damage to, or failure of, these
25 structures during a major local seismic event is generally moderate to high. For major earthquakes
26 along larger faults, ground rupture can extend for considerable distances (hundreds or thousands of
27 feet), with associated risks for surface and subsurface structures such as buildings and utilities (e.g.,
28 gas or water pipelines). See Appendix 3E, *Potential Seismic and Climate Change Risks to SWP/CVP*
29 *Water Supplies* for more detailed discussion. In instances of a catastrophic event due to climate
30 change or a seismic event, there would also be a potential for adverse effect to public services (such
31 as emergency response) and facilities (such as hospitals).

32 **CEQA Conclusion:** Under the No Action Alternative, public services such as law enforcement, fire
33 protection, emergency response services, public medical services, public schools, libraries, or other
34 services would operate and expand as needed to appropriately serve the Plan Area in accordance
35 with applicable general plans and local, state, and federal laws pertaining to service levels. There
36 would be no BDCP-related disruption to existing utility services because there would be no
37 construction of the action alternatives. This impact would be less than significant. No mitigation is
38 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

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

3 **Increased Public Service Demands Associated with Construction Work Areas and Activities**

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

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

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

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

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

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

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

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

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

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

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

32 **Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the** 33 **Proposed Water Conveyance Facilities**

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

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

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

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

16 **Mitigation Measure UT-2: Ensure the Continuation of Fire Protection Services by the** 17 **Courtland Fire Protection District**

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

31 **Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water** 32 **Conveyance Facilities**

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

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

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

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

16 **CEQA Conclusion:** The majority of construction jobs are expected to be filled by workers from the
 17 existing five-county labor force. The incremental increase in school-age children of construction
 18 personnel moving into the area for specialized construction jobs (e.g., tunnel construction) would
 19 likely be distributed through a number of schools within the Plan Area. This increase in school
 20 enrollment would not be substantial enough to exceed the capacity of any individual school or
 21 district, or to warrant construction of a new facility or alteration of an existing facility within the
 22 Plan Area. The impact is less than significant. No mitigation is required².

23 **Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of** 24 **Constructing the Proposed Water Conveyance Facilities**

25 **NEPA Effects:** Construction of the proposed water conveyance facilities would require water supply
 26 and wastewater treatment services. While general construction activities including dust control and
 27 soil compaction would require a supply of water, for purposes of this analysis, the major potable
 28 water supply needs would be for the concrete batch plants (see Chapter 3, *Description of*
 29 *Alternatives*) and field offices during construction. Potable water supply needed for construction
 30 was calculated based on the amount of concrete required for this alternative and the amount of
 31 water required by the field offices. Under this alternative, five concrete batch plants would be
 32 constructed onsite for temporary use during construction. Each batch concrete plant would require
 33 fresh water for batching, dust control, and washing requirements (including concrete truck
 34 washout). The potable water supply estimates also considered the number of field offices needed for
 35 each alternative and assumed that each field office would have an average of 10 workers, an average
 36 of 40 gallons of water would be consumed per person per day (including drinking, hand washing,
 37 and toilet use), and would be operational for 3,285 days (i.e., 9 years at 365 days per year³). 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.

1 20-3 presents the estimated potable water supply required for concrete (by each type of facility)
2 and for field offices.

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

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

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

1 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

2

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

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

11 **NEPA Effects:** Construction of the proposed water conveyance facilities would generate construction
 12 debris and excavated material that would require disposal at a landfill. For purposes of this analysis,
 13 an estimate of the total quantity of excavated material to be disposed at a landfill was calculated for
 14 each facility of the alternative based on construction cost estimating documents. Construction of the
 15 pipeline/tunnel alternatives, including Alternative 1A, is estimated to generate 17,846 tons of
 16 excavated material. Construction of tunnel segments under this alternative would require disposal
 17 of RTM, which is a mix of soils cutting and soil conditioning agents (water, air, bentonite, foaming
 18 agents, and/or polymers or biopolymers). As part of the alternative, DWR would implement an
 19 environmental commitment (as discussed in Appendix 3B, *Environmental Commitments*) that would
 20 dispose of and reuse spoils, reusable tunnel material, and dredged material. Before RTM can be
 21 reused or reintroduced to the environment, it must be managed and treated. Construction of the
 22 BDCP alternatives would utilize the controlled storage method; under this approach, RTM would be
 23 transported to designated RTM work areas for long-term disposal and storage. Based on a review of
 24 the typical additives in RTM, it is assumed that the RTM can be disposed of onsite; however, to be
 25 conservative, an estimated 0.1% of the excavated waste, accounting for any hazardous substances or
 26 wastes coming from farming operations or previous land uses, would require disposal at a landfill⁴.
 27 Based on these assumptions, up to 17.85 tons (i.e., 0.1% of 17,846 tons) of excavated materials
 28 would require disposal at a landfill. Under this alternative, the total volume of excavated material
 29 that would require disposal at a landfill during the construction period (17.85 tons) represents a
 30 negligible impact on the 11 solid waste landfills, which have a total remaining permitted capacity of
 31 over 300 million tons or 440.25 million cubic yards (Appendix 20A).

32 Construction debris, including debris from structure demolition, power poles, utility lines, piping,
 33 and other materials would also be generated as a result of construction of this alternative. For
 34 purposes of this analysis, the volume of construction debris generated during construction was
 35 based on estimated truck trips that were assumed to be potentially associated with disposal of
 36 construction debris at a landfill. This includes all trips by trucks categorized as Heavy Construction
 37 T7 that are likely to carry debris (flatbed, dump and tractor) detailed in Chapter 22, *Air Quality and*
 38 *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.

1 there would be an average of 19 trips per day, or 41,908 trips over the 9-year construction period⁵.
 2 One truck typically holds approximately 20 cubic yards of material. Therefore, an average of 380
 3 cubic yards (273 tons) of construction debris would be generated per day, totaling 838,152 cubic
 4 yards (603,469 tons⁶) of construction debris over the 9-year construction period.

5 Although it is not known specifically which landfills would be utilized during construction of the
 6 proposed water conveyance facilities, disposal of demolition and excavated material would be
 7 expected to occur at several different locations depending on the type of material and its origin. It is
 8 standard practice that the construction contractors handle and dispose of all hazardous and non-
 9 hazardous materials during construction. Of the solid waste facilities in the Plan Area counties, there
 10 are 30 active facilities that can handle solid waste, including 11 solid waste landfills with a
 11 remaining permitted capacity of well over 300 million tons, and 18 large volume
 12 transfer/processing facilities (see Appendix 20A, Table 20A-6 for a listing of each facility's name,
 13 location, permitted capacity, remaining capacity, maximum permitted daily throughput, and
 14 proximity to the statutory Delta). According to the California Department of Resources Recycling
 15 and Recovery (CalRecycle) Solid Waste Information System (SWIS), the 11 solid waste landfills
 16 within the study area have estimated "cease operation" dates⁷ ranging from between 2016 and
 17 2082. Of the remaining permitted capacity at area landfills, approximately 70% of the capacity is
 18 associated with landfills that are not expected to close for 18 to 70 more years (CalRecycle 2012).

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

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

32 Based on the CIWMB (now CalRecycle) study, approximately 93% of waste generated by the Other
 33 C&D subsector was estimated to be divertible. The 10 most prevalent materials for Other C&D waste
 34 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).

1 divertible; only painted/demolition gypsum board was not. The most prominent single material
 2 type was large asphalt pavement without re-bar, which accounted for approximately 44% of total
 3 waste diverted, whereas all other material types in this waste subsector accounted for less than
 4 10% of other C&D waste (California Integrated Waste Management Board 2006:31).

5 **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.

6
 7 Table 20-4 identifies some of the types of construction and demolition debris that would be
 8 anticipated to be generated as a result of construction of Alternative 1A. Demolished concrete could
 9 be sent to a concrete recycling facility. Other select materials, such as doors, windows, siding,
 10 lumber, timbers, and steel, may also be salvaged and reused. Based on CalRecycle's study, 561,226
 11 tons (i.e., 93% of the 603,469 tons of construction debris) is estimated to be divertible. Diverting
 12 over 90% of this waste from landfills would substantially lessen any potential effects on Plan Area
 13 solid waste management providers. The materials requiring disposal that are considered non-
 14 divertible would be hauled offsite to a suitable landfill depending on the type of material and its
 15 origin.

16 While a 90% diversion rate is not always feasible in every instance, the State Agency Model
 17 Integrated Waste Management Act (IWMA) (Chapter 764, Statutes of 1999, Strom-Martin) which
 18 took effect on January 1, 2000 as part of AB 75, requires that each state agency (including DWR) is
 19 mandated to develop and implement an integrated waste management plan (IWMP). The provisions
 20 of the IWMA require that all state agencies and large state facilities must divert at least 50% of their
 21 solid waste from disposal facilities on and after January 1, 2004. Another requirement of the law is
 22 that each state agency and large facility is to submit an annual report to CalRecycle summarizing its
 23 yearly progress in implementing waste diversion programs. All solid waste management activities
 24 for the construction and operations and maintenance associated with Alternative 1A would be
 25 conducted in accordance with regulations set forth by CalRecycle, and any applicable IWMP
 26 developed for affected jurisdictions. Although it is not known which landfills will be utilized during
 27 construction of the proposed water conveyance facilities, as construction contractors will handle
 28 disposal of demolition and excavated material, it is assumed that at least 50% of waste (301,734
 29 tons) will be diverted in compliance with the provisions of the IWMA. Therefore, after consideration
 30 of diversion requirements, the volume of construction debris that requires disposal at landfills
 31 (301,734 tons, at most) represents a negligible effect on the remaining permitted capacity of Plan
 32 Area landfills, and is not expected to exceed this capacity.

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

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

25 **Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed** 26 **Water Conveyance Facilities**

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

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

40 This water conveyance alignment, along with its associated physical structures, could interfere with
 41 9 overhead power/electrical transmission lines (Chapter 24, *Hazards and Hazardous Materials*,
 42 Figure 24-6), 5 natural gas pipelines (Table 20-5 and Chapter 24, *Hazards and Hazardous Materials*,
 43 Figure 24-3), 6 active oil or gas wells (Chapter 24, *Hazards and Hazardous Materials*, Figure 24-5),
 44 the Mokelumne Aqueduct, and approximately 38 miles of agricultural delivery canals and drainage

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

6 **Table 20-5. Number and Type of Pipelines and Electrical Transmission Lines Crossing Action**
 7 **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					

8

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

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

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

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

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

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

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

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

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

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

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

27 **Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or** 28 **Minimizes Any Effect on Operational Reliability**

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

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

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

- 41 • New or modified irrigation pumping plants.
- 42 • Extended delivery pipes.

- 1 • New or modified drainage ditches.
- 2 • New or modified drainage pumping plants.

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

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

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

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

17 ***NEPA Effects:***

18 **Public Services**

19 Operation and maintenance activities would require minimal labor. For the purposes of this
20 analysis, it was estimated that weekly operations and maintenance would require approximately
21 190 workers (Table 20-2), including maintenance crew, management, repair crew, pumping plant
22 crew, and dewatering crew. These activities would take place along the entire alternative alignment.
23 Given the limited number of workers involved and the large number of work sites, it is not
24 anticipated that routine operations and maintenance activities or major inspections would result in
25 substantial demand for law enforcement, fire protection, or emergency response services. In
26 addition, operation and maintenance would not place service demand on public schools or libraries.
27 The operation and maintenance of the proposed water conveyance facilities would not result in the
28 need for new or physically altered government facilities as a result of increased need for public
29 services.

30 **Utilities**

31 ***Water and Wastewater***

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

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

6 ***Solid Waste***

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

15 The volume of solids generated on a daily basis would depend on the volume of water pumped
16 through the intakes, as well as the sediment load of the river. Based on a worst-case scenario,
17 considering the throughput of the intakes at a maximum flow of 3,000 cfs, an estimated 137,000 dry
18 pounds of solids per day would be pumped to the solids lagoons. During periods of high sediment
19 load in the Sacramento River, the daily mass of solids would be expected to increase up to 253,000
20 dry pounds per day. The annual volume of solids is anticipated to be approximately 486,000 cubic
21 feet (dry solids).

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

25 ***Electricity and Natural Gas***

26 Operation and maintenance of proposed water conveyance facilities under this alternative would
27 require new permanent transmission lines for intakes, pumping plants, operable barriers, boat
28 locks, and gate control structures throughout the various proposed conveyance alignments and
29 construction of project facilities. Electrical power to operate the new north Delta pumping plant
30 facilities would be delivered through a single 230 kV transmission line. Possible alignments for the
31 230 kV transmission line are shown in Figure 3-25 and the alignment selected for analysis under
32 Alternative 1A is shown in Figure M3-1 in the Mapbook Volume. Two utility grids could supply
33 power to the BDCP conveyance facilities: PG&E (under the control of the California Independent
34 System Operator) and the Western. The electrical power needed for the conveyance facilities would
35 be procured in time to support construction and operation of the facilities.

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

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

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

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

10 **Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the** 11 **Proposed CM2–CM11**

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

18 **Public Services**

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

36 **Utilities**

37 ***Water and Wastewater***

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

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

12 ***Solid Waste***

13 Implementation of some of the conservation measures would result in construction debris and
14 green waste. Implementation of habitat restoration and enhancement proposed under CM4–CM11
15 would involve restoration, enhancement, and management of various types of habitat. Construction
16 activities could require clearing and grubbing, demolition of existing structures (e.g., roads and
17 utilities), surface water quality protection, dust control, establishment of storage and stockpile
18 areas, temporary utilities and fuel storage, and erosion control. The estimated tonnage of
19 construction debris and solid waste that would be generated from construction associated with the
20 proposed conservation measures is unknown. However, there is a remaining landfill capacity of over
21 300 million tons in nearby landfills (Appendix 20A, Table 20A-6). The disposal of construction
22 debris and excavated material would occur at several different locations depending on the type of
23 material and its origin. Based on the capacity of the landfills in the region, and the waste diversion
24 requirements set forth by the State of California, it is expected that construction and operation of the
25 proposed conservation measures would not cause any exceedance of landfill capacity.

26 ***Electricity and Natural Gas***

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

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

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

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

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

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

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

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

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

24 **20.3.3.3 Alternative 1B—Dual Conveyance with East Alignment and**
 25 **Intakes 1–5 (15,000 cfs; Operational Scenario A)**

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

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

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

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

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

15 **Increased Public Service Demands Associated with Construction Work Areas and Activities**

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

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

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

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

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

1 hazardous materials spills, contamination, and fires, and provide for onsite security at construction
 2 sites, would minimize potential effects related to demand for public services associated with
 3 construction property protection and the potential for construction-related accidents.

4 Environmental commitments would also be incorporated to reduce potential exposure of hazardous
 5 materials to the human and natural environment, thereby minimizing the potential related demand
 6 for fire or emergency services. This effect is not considered adverse.

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

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

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

32 **Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the** 33 **Proposed Water Conveyance Facilities**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

28 **Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during** 29 **Construction of the Proposed Water Conveyance Facilities**

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

1 wastes coming from farming operations or previous land uses, would require disposal at a landfill⁸.
 2 Based on these assumptions, up to 58.25 tons (i.e., 0.1% of 58,253 tons) of excavated materials
 3 would require disposal at a landfill. Under this alternative, the total volume of excavated material
 4 that would require disposal at a landfill during the construction period (58.25 tons) represents a
 5 negligible impact on the 11 solid waste landfills, which have a total remaining permitted capacity of
 6 over 300 million tons (Appendix 20A).

7 Construction debris, including debris from structure demolition, power poles, utility lines, piping,
 8 and other materials would also be generated as a result of construction of this alternative. For
 9 purposes of this analysis, the volume of construction debris generated during construction was
 10 based on estimated truck trips that were assumed to be potentially associated with disposal of
 11 construction debris at a landfill. This includes all trips by trucks categorized as Heavy Construction
 12 T7 that are likely to carry debris (flatbed, dump, and tractor) detailed in Chapter 22, *Air Quality and*
 13 *Greenhouse Gases* (Table 22B-5 of Appendix 22B, *Air Quality Assumptions*). Under this alternative,
 14 there would be approximately 12 outbound trips per day⁹. One truck typically holds approximately
 15 20 cubic yards of material. Therefore, an average of 240 cubic yards (173 tons¹⁰) of construction
 16 debris would be generated per day, totaling 522,846 cubic yards (376,449 tons) of construction
 17 debris over the 9-year construction period.

18 Although it is not known specifically which landfills would be utilized during construction of the
 19 proposed water conveyance facilities, disposal of demolition and excavated material would be
 20 expected to occur at several different locations depending on the type of material and its origin. It is
 21 standard practice that the construction contractors handle and dispose of all hazardous and non-
 22 hazardous materials during construction. Of the solid waste facilities in the Plan Area counties, there
 23 are 30 active facilities that can handle solid waste, including 11 solid waste landfills with a
 24 remaining permitted capacity of well over 300 million tons, and 18 large volume
 25 transfer/processing facilities (see Appendix 20A, Table 20A-6 for a listing of each facility's name,
 26 location, permitted capacity, remaining capacity, maximum permitted daily throughput, and
 27 proximity to the statutory Delta). According to the CalRecycle SWIS, the 11 solid waste landfills
 28 within the study area have estimated "cease operation" dates¹¹ ranging from between 2016 and
 29 2082. Of the remaining permitted capacity at area landfills, approximately 70% of the capacity is
 30 associated with landfills that are not expected to close for 18 to 70 more years (CalRecycle 2012).

31 Of the estimated 376,449 tons of construction debris that would be generated under this alternative,
 32 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).

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

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

11 Based on the CIWMB (now CalRecycle) study, approximately 93% of waste generated by the Other
12 C&D subsector was estimated to be divertible. The 10 most prevalent materials for Other C&D waste
13 are shown in Table 20-4. Nine of the top ten materials for Other C&D waste were considered
14 divertible; only painted/demolition gypsum board was not. The most prominent single material
15 type was large asphalt pavement without re-bar, which accounted for approximately 44% of total
16 waste diverted, whereas all other material types in this waste subsector accounted for less than
17 10% of other C&D waste (California Integrated Waste Management Board 2006:31).

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

27 While a 90% diversion rate is not always feasible in every instance, the State Agency Model IWMA
28 (Chapter 764, Statutes of 1999, Strom-Martin) which took effect on January 1, 2000 as part of AB 75,
29 requires that each state agency (including DWR) is mandated to develop and implement an IWMP.
30 The provisions of the IWMA require all state agencies and large state facilities to divert at least 50%
31 of their solid waste from disposal facilities on and after January 1, 2004. Another requirement of the
32 law is that each state agency and large facility is to submit an annual report to CalRecycle
33 summarizing its yearly progress in implementing waste diversion programs. All solid waste
34 management activities for the construction and operations and maintenance associated with
35 Alternative 1B would be conducted in accordance with regulations set forth by CalRecycle, and any
36 applicable IWMP developed for affected jurisdictions. Although it is not known which landfills will
37 be utilized during construction of the proposed water conveyance facilities, as construction
38 contractors will handle disposal of demolition and excavated material, it is assumed that at least
39 50% of waste (188,225 tons) will be diverted in compliance with the provisions of the IWMA.
40 Therefore, after consideration of diversion requirements, the volume of construction debris that
41 requires disposal at landfills (188,225 tons, at most) represents a negligible effect on the remaining
42 permitted capacity of Plan Area landfills, and is not expected to exceed this capacity.

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

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

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

23 **Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed** 24 **Water Conveyance Facilities**

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

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

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

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

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

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

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

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

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

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

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

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

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

20 **Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or** 21 **Minimizes Any Effect on Operational Reliability**

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

23 **Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or** 24 **Minimizes Any Effect on Worker and Public Health and Safety**

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

26 **Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance** 27 **of the Proposed Water Conveyance Facilities**

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

30 **Public Services**

31 Operation and maintenance activities would require minimal labor. For the purposes of this
 32 analysis, it was estimated that weekly operations and maintenance would require approximately
 33 200 workers (Table 20-2) (including maintenance crew, management, repair crew, pumping plant
 34 crew, and dewatering crew). These activities would take place along the entire alternative
 35 alignment. Given the limited number of workers involved and the large number of work sites, it is
 36 not anticipated that routine operations and maintenance activities or major inspections would
 37 result in substantial demand for law enforcement, fire protection, or emergency response services.
 38 In addition, operation and maintenance would not place service demand on public schools or

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

4 **Utilities**

5 ***Water and Wastewater***

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

20 ***Solid Waste***

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

30 The volume of solids generated on a daily basis would depend on the volume of water pumped
31 through the intakes, as well as the sediment load within the river. Based on a worst-case scenario by
32 considering the throughput of the intakes at a maximum flow of 3,000 cfs, approximately 137,000
33 dry pounds of solids per day would be pumped to the solids lagoons. During periods of high
34 sediment load in the Sacramento River, the daily mass of solids would be expected to increase to as
35 much as 253,000 dry pounds per day. The annual volume of solids is anticipated to be 486,000 cubic
36 feet (dry solids).

37 As designed, the study area is expected to have capacity to store sediment accumulated over a
38 50-year period. Solids from sediment load would not exceed the permitted capacity or adversely
39 impact the lifespan of area landfills.

1 **Electricity and Natural Gas**

2 Operation and maintenance of proposed water conveyance facilities under this alternative would
 3 require new permanent transmission lines for intakes, pumping plants, operable barriers, boat
 4 locks, and gate control structures throughout the various proposed conveyance alignments and
 5 construction of project facilities. Electrical power to operate the new north Delta pumping plant
 6 facilities would be delivered through a single 230 kV transmission line. Possible alignments for the
 7 230 kV transmission line are shown in Figure 3-25 and the alignment selected for analysis under
 8 Alternative 1B is shown in Figure M3-2 in the Mapbook Volume. Two utility grids could supply
 9 power to the BDCP conveyance facilities: PG&E (under the control of the California Independent
 10 System Operator) and the Western. The electrical power needed for the conveyance facilities would
 11 be procured in time to support construction and operation of the facilities.

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

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

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

28 **Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the** 29 **Proposed CM2–CM11**

30 **NEPA Effects:** Generally, this effect under Alternative 1B would be similar to that under Alternative
 31 1A.

32 Similar to Alternative 1A, conservation components under Alternative 1B would restore up to
 33 83,900 acres of tidal habitat, seasonally inundated floodplain, grassland communities, vernal pool
 34 complex habitat, and nontidal marsh areas. Additionally, 20 linear miles of channel margin habitat
 35 would be enhanced. While locations of conservation components have not been selected,
 36 implementation of conservation components for habitat restoration and channel margin habitat
 37 enhancement would occur within the ROAs described in Chapter 3, *Description of Alternatives*.

38 **Public Services**

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

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

11 **Utilities**

12 ***Water and Wastewater***

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

29 ***Solid Waste***

30 Implementation of some of the conservation measures would result in construction debris and
31 green waste. Specifically, implementation of habitat restoration and enhancement proposed under
32 CM4–CM11 would involve restoration, enhancement, and management of various types of habitat.
33 Construction activities could require clearing and grubbing, demolition of existing structures (e.g.,
34 roads and utilities), surface water quality protection, dust control, establishment of storage areas
35 and stockpile areas, temporary utilities and fuel storage, and erosion control. The estimated tonnage
36 of construction debris and solid waste that would be generated from construction activities
37 associated with the proposed conservation measures is unknown at this time. However, there is a
38 remaining capacity of well over 300 million tons in nearby landfills (see Table 20A-6 in Appendix
39 20A for a listing of each facility's name, location, permitted capacity, remaining capacity, maximum
40 permitted daily throughput, and proximity to the statutory Delta boundary). According to the
41 CalRecycle SWIS, the 11 solid waste landfills within the study area have estimated to "cease

1 operation” dates¹² ranging from between 2016 and 2082. Of the remaining permitted capacity at
 2 area landfills, approximately 70% of the capacity is associated with landfills that are not expected to
 3 close for 18 to 70 more years (CalRecycle 2012).The disposal of the excavated material would occur
 4 at several different locations depending on the type of material and its origin. Based upon the
 5 capacity of the landfills in the region, and the waste diversion requirements set forth by the State of
 6 California, it is expected that construction and operation of the proposed conservation measures
 7 would not cause any exceedance of landfill capacity.

8 ***Electricity and Natural Gas***

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

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

27 ***CEQA Conclusion:*** Implementation of the proposed conservation measures would not likely require
 28 alteration or construction of new government facilities resulting from an increased demand for
 29 public services and utilities. Measures to reduce stressors on covered species could result in
 30 additional water supply requirements, but are not expected to require substantial increases in
 31 demand for city or county water and wastewater treatment services. Construction and operation
 32 activities associated with the proposed conservation measures would result in a less than significant
 33 impact on solid waste management facilities based on the capacity of the landfills in the region and
 34 the waste diversion requirements set forth by the State of California. However, the location and
 35 construction and operational details (i.e., water consumption and water sources associated with
 36 conservation measures) for these facilities and programs have not been developed. Therefore, the
 37 need for new or expanded water or wastewater treatment facilities and the potential to disrupt
 38 utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce
 39 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).

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

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

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

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

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

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

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

11 **20.3.3.4 Alternative 1C—Dual Conveyance with West Alignment and**
12 **Intakes W1–W5 (15,000 cfs; Operational Scenario A)**

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

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

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

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

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

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

4 **Increased Public Service Demands Associated with Construction Work Areas and Activities**

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

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

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

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

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

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

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

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

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

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

23 **Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the** 24 **Proposed Water Conveyance Facilities**

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

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

31 **Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water** 32 **Conveyance Facilities**

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

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

1 no increased demand for public school services from these workers (see Table 20A-4, Appendix
 2 20A). While some workers who relocate from outside of the Plan Area could have school-age
 3 children resulting in an increase in public school enrollment, this minor increase in population in the
 4 Plan Area would not be expected to result in an increase in enrollment numbers substantial enough
 5 to exceed the capacity of any individual school or district, or to warrant construction of a new
 6 facility, within the Plan Area. Further, it would be difficult to identify specifically where within the
 7 region these new employees would reside. However, Table 20A-4 in Appendix 20A lists the 209
 8 schools that serve the communities within the Plan Area and the current enrollment numbers for
 9 each school, which identifies a total enrollment of 148,880 across the Plan Area. The incremental
 10 increase in school-age children of construction personnel moving into the area for specialized jobs
 11 as a result of construction of Alternative 1C would likely be distributed through a number of schools
 12 within the Plan Area. This increase would not be substantial enough to exceed the capacity of any
 13 identified school or district, or to warrant construction of a new facility.

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

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

24 **Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of** 25 **Constructing the Proposed Water Conveyance Facilities**

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

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

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

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

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

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

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

3 **NEPA Effects:** Potential effects associated with an increased demand for solid waste management
 4 providers in the Plan Area and surrounding communities as a result of waste generated from
 5 construction of the proposed water conveyance facilities would be similar to those described under
 6 Alternative 1A. For purposes of this analysis, an estimate of the total quantity of excavated material
 7 to be disposed at a landfill was calculated for each facility of the alternative based on construction
 8 cost estimating documents. Construction of the west alignment alternatives, including Alternative
 9 1C, is estimated to generate 35,714 tons of excavated material. As part of the alternative, DWR
 10 would implement an environmental commitment (as discussed in Appendix 3B, *Environmental*
 11 *Commitments*) that would dispose of and reuse spoils, reusable tunnel material, and dredged
 12 material. Based on a review of the typical additives in RTM, it is assumed that the RTM can be
 13 disposed of on site; however, to be conservative, an estimated 0.1% of the excavated waste,
 14 accounting for any hazardous substances or wastes coming from farming operations or previous
 15 land uses, would require disposal at a landfill¹³. Based on these assumptions, up to 35.71 tons (i.e.,
 16 0.1% of 35,714 tons) of excavated materials would require disposal at a landfill. Under this
 17 alternative, the total volume of excavated material that would require disposal at a landfill during
 18 the construction period (35.715 tons) represents a negligible impact on the 11 solid waste landfills
 19 which have a total remaining permitted capacity of over 300 million tons.

20 Construction debris, including debris from structure demolition, power poles, utility lines, piping,
 21 and other materials would also be generated as a result of construction of this alternative. For
 22 purposes of this analysis, the volume of construction debris generated during construction was
 23 based on estimated truck trips that were assumed to be potentially associated with disposal of
 24 construction debris at a landfill. This includes all trips by trucks categorized as Heavy Construction
 25 T7 that are likely to carry debris (flatbed, dump and tractor) detailed in Chapter 22, *Air Quality and*
 26 *Greenhouse Gases* (Table 22B-5 of Appendix 22B, *Air Quality Assumptions*). Under this alternative,
 27 there would be an average of 45 outbound trips per day¹⁴. One truck typically holds approximately
 28 20 cubic yards of material. Therefore, an average of 900 cubic yards (648 tons¹⁵) of construction
 29 debris would be generated per day, totaling 2,016,798 (1,452,094 tons) of construction debris over
 30 the 9-year construction period.

31 Although it is not known specifically which landfills would be utilized during construction of the
 32 proposed water conveyance facilities, disposal of demolition and excavated material would be
 33 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.

1 standard practice that the construction contractors handle and dispose of all hazardous and non-
 2 hazardous materials during construction. Of the solid waste facilities in the Plan Area counties, there
 3 are 30 active facilities that can handle solid waste, including 11 solid waste landfills with a
 4 remaining permitted capacity of well over 300 million tons, and 18 large volume
 5 transfer/processing facilities (see Appendix 20A, Table 20A-6 for a listing of each facility's name,
 6 location, permitted capacity, remaining capacity, maximum permitted daily throughput, and
 7 proximity to the statutory Delta). According to the CalRecycle SWIS, the 11 solid waste landfills
 8 within the study area have estimated "cease operation" dates¹⁶ ranging from between 2016 and
 9 2082. Of the remaining permitted capacity at area landfills, approximately 70% of the capacity is
 10 associated with landfills that are not expected to close for 18 to 70 more years (CalRecycle 2012).

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

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

23 Based on the CIWMB (now CalRecycle) study, approximately 93% of waste generated by the Other
 24 C&D subsector was estimated to be divertible. The 10 most prevalent materials for Other C&D waste
 25 are shown in Table 20-4. Nine of the top ten materials for Other C&D waste were considered
 26 divertible; only painted/demolition gypsum board was not. The most prominent single material
 27 type was large asphalt pavement without re-bar, which accounted for approximately 44% of total
 28 waste diverted, whereas all other material types in this waste subsector accounted for less than
 29 10% of other C&D waste (California Integrated Waste Management Board 2006:31).

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

37 While a 90% diversion rate is not always feasible in every instance, the State Agency Model IWMA
 38 (Chapter 764, Statutes of 1999, Strom-Martin) which took effect on January 1, 2000 as part of AB 75,
 39 requires that each state agency (including DWR) is mandated to develop and implement an IWMP.
 40 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).

1 of their solid waste from disposal facilities on and after January 1, 2004. Another requirement of the
 2 law is that each state agency and large facility is to submit an annual report to CalRecycle
 3 summarizing its yearly progress in implementing waste diversion programs. All solid waste
 4 management activities for the construction and operations and maintenance associated with
 5 Alternative 1C would be conducted in accordance with regulations set forth by CalRecycle, and any
 6 applicable IWMP developed for affected jurisdictions. Although it is not known which landfills will
 7 be utilized during construction of the proposed water conveyance facilities, as construction
 8 contractors will handle disposal of demolition and excavated material, it is assumed that at least
 9 50% of waste will be diverted in compliance with the provisions of the IWMA. Therefore, after
 10 consideration of diversion requirements, the volume of construction debris that requires disposal at
 11 landfills represents a negligible effect on the remaining permitted capacity of Plan Area landfills, and
 12 is not expected to exceed this capacity.

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

23 **CEQA Conclusion:** Based on the capacity of the landfills in the region, and the waste diversion
 24 requirements set forth by the State of California, it would be expected that construction of the
 25 proposed water conveyance facilities would not cause any exceedance of landfill capacity. This
 26 alternative is not expected to impact the lifespan of area landfills, because over 70% of the
 27 remaining permitted capacity is associated with landfills with expected lifespans of between 18 and
 28 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste
 29 disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B,
 30 *Environmental Commitments*) would require development of a project specific construction debris
 31 recycling and diversion program to achieve a documented 50% diversion of construction waste.
 32 Therefore, there would be a less than significant impact on solid waste management facilities.

33 **Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed** 34 **Water Conveyance Facilities**

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

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

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

3 This water conveyance alignment, along with its associated physical structures, would cross 9
4 power/electrical transmission lines (2 with multiple crossings) (Chapter 24, *Hazards and Hazardous*
5 *Materials*, Figure 24-6), 5 natural gas pipelines (Table 20-4 and Chapter 24, *Hazards and Hazardous*
6 *Materials*, Figure 24-3), 9 active oil/gas wells (Chapter 24, *Hazards and Hazardous Materials*, Figure
7 24-5), the Mokelumne Aqueduct, the Los Vaqueros Pipeline, and approximately 124 miles of
8 agricultural delivery canals and drainage ditches, including approximately 45 miles on Ryer Island,
9 37 miles on the Netherlands (north of Ryer Island), 20 miles on Byron Tract, and 12 miles on Merritt
10 Island. The potential for construction of the proposed conveyance facilities to cause disruptions to
11 agricultural infrastructure in the study area are addressed in Chapter 14, *Agricultural Resources*.
12 Specifically, Chapter 14 addresses potential conflicts with existing agricultural irrigation and
13 drainage facilities as a result of construction. Additionally, local electrical distribution lines and
14 communication lines occur along the conveyance alignment and could be disrupted or relocated to
15 allow for the construction of project facilities. As under Alternative 1A, in some cases, disruption of
16 infrastructure and facility operation would be avoided because BDCP facilities would cross either
17 over or under the existing utilities. However, in some cases, construction of BDCP facilities could
18 require utilities to be relocated. Relocation of local electrical facilities may also be necessary.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

5 **Public Services**

6 Operation and maintenance activities would require minimal labor. For the purposes of this
7 analysis, it was estimated that weekly operations and maintenance would require approximately
8 190 workers (Table 20-2), including, maintenance crew, management, repair crew, pumping plant
9 crew, and dewatering crew. These activities would take place along the entire alternative alignment.
10 Given the limited number of workers involved and the large number of work sites, it is not
11 anticipated that routine operations and maintenance activities or major inspections would result in
12 substantial demand for law enforcement, fire protection, or emergency response services. In
13 addition, operation and maintenance would not place service demand on public schools or libraries.
14 The operation and maintenance of the proposed water conveyance facilities would not result in the
15 need for new or physically altered government facilities as a result of increased need for public
16 services.

17 **Utilities**

18 ***Water and Wastewater***

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

33 ***Solid Waste***

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

1 The volume of solids generated on a daily basis would depend on the volume of water pumped
2 through the intakes, as well as the sediment load of the river. Based on a worst-case scenario,
3 considering the throughput of the intakes at a maximum flow of 3,000 cfs, an estimated 137,000 dry
4 pounds of solids per day would be pumped to the solids lagoons. During periods of high sediment
5 load in the Sacramento River, the daily mass of solids would be expected to increase up to 253,000
6 dry pounds per day. The annual volume of solids is anticipated to be approximately 486,000 cubic
7 feet (dry solids).

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

11 ***Electricity and Natural Gas***

12 Operation and maintenance of proposed water conveyance facilities under this alternative would
13 require new permanent transmission lines for intakes, pumping plants, operable barriers, boat
14 locks, and gate control structures throughout the various proposed conveyance alignments and
15 construction of project facilities. Electrical power to operate the new north Delta pumping plant
16 facilities would be delivered through a single 230 kV transmission line. Possible alignments for the
17 230 kV transmission line are shown in Figure 3-25 and the alignment selected for analysis under
18 Alternative 1C is shown in Figure M3-3 in the Mapbook Volume. Two utility grids could supply
19 power to the BDCP conveyance facilities: PG&E (under the control of the California Independent
20 System Operator) and the Western. The electrical power needed for the conveyance facilities would
21 be procured in time to support construction and operation of the facilities.

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

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

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

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

3 ***NEPA Effects: Public Services***

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

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

23 **Utilities**

24 ***Water and Wastewater***

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

1 **Solid Waste**

2 Implementation of some of the conservation measures would result in construction debris, green
 3 waste, and hazardous waste. Specifically, implementation of habitat restoration and enhancement
 4 proposed under CM4–CM11 would involve restoration, enhancement and management of various
 5 types of habitat. Construction activities could require clearing and grubbing, demolition of existing
 6 structures (e.g., roads and utilities), surface water quality protection, dust control, establishment of
 7 storage areas and stockpile areas, temporary utilities and fuel storage, and erosion control. The
 8 estimated tonnage of construction debris and solid waste that would be generated from
 9 construction activities associated with the proposed conservation measures is unknown at this time.
 10 However, there is a remaining capacity of well over 300 million tons in nearby landfills (see Table
 11 20A-6 in Appendix 20A for a listing of each facility’s name, location, permitted capacity, remaining
 12 capacity, maximum permitted daily throughput, and proximity to the statutory Delta boundary).
 13 According to the CalRecycle SWIS, the 11 solid waste landfills within the study area have estimated
 14 to “cease operation” dates¹⁷ ranging from between 2016 and 2082. Of the remaining permitted
 15 capacity at area landfills, approximately 70% of the capacity is associated with landfills that are not
 16 expected to close for 18 to 70 more years (CalRecycle 2012). The disposal of the excavated material
 17 would occur at several different locations depending on the type of material and its origin. Based
 18 upon the capacity of the landfills in the region, and the waste diversion requirements set forth by the
 19 State of California, it is expected that the construction and operation of the proposed conservation
 20 measures would not cause any exceedance of landfill capacity.

21 **Electricity and Natural Gas**

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

28 In summary, Alternative 1C would restore, enhance, and protect thousands of acres of habitat,
 29 including the restoration of up to 65,000 acres of tidal habitat. The locations, construction, and
 30 operational details for these and other conservation measures have not been identified. Adverse
 31 effects due to the construction, operation and maintenance activities associated with the
 32 conservation measures are not expected to result in the need for new government facilities to
 33 provide public services or the need for new or expanded water or wastewater treatment facilities
 34 based on increased demand. However, there is a potential for the disruption or relocation of utility
 35 infrastructure, which has the potential to result in an adverse effect. Further, no substantive adverse
 36 effects to solid waste management facilities are anticipated. Because the location and construction
 37 and operational details (i.e., water consumption and water sources associated with conservation
 38 measures) for these facilities and programs have not yet been developed, the need for new or
 39 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).

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

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

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

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

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

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

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

23 **20.3.3.5 Alternative 2A—Dual Conveyance with Pipeline/Tunnel and Five**
 24 **Intakes (15,000 cfs; Operational Scenario B)**

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

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

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

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

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

25 **Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the** 26 **Proposed Water Conveyance Facilities**

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

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

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

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

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

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

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

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

26 **NEPA Effects:** Effects related to the need for expanded water or wastewater treatment facilities
27 would be similar to those for Alternative 1A. For purposes of this analysis, the amount of water
28 supply required under this alternative would be the same as under Alternative 1A. As such, the total
29 potable water supply needed under this alternative is estimated to be 168.1 million gallons (Table
30 20-3). While water needs would be substantial, these requirements would be temporary and could
31 be met with non-municipal water sources without any new water supply entitlements. Also similar
32 to Alternative 1A, wastewater created as a result of tunnel boring and concrete batching would be
33 treated onsite at isolated RTM storage areas and designated concrete batch plant sites, respectively.
34 Construction of Alternative 2A would not require or result in the construction of new water or
35 wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

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

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

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

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

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

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

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

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

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

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

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

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

23 **Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or** 24 **Minimizes Any Effect on Operational Reliability**

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

26 **Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or** 27 **Minimizes Any Effect on Worker and Public Health and Safety**

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

29 **Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance** 30 **of the Proposed Water Conveyance Facilities**

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

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

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

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

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

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

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

33 **Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the** 34 **Proposed CM2–CM11**

35 ***NEPA Effects:*** Potential effects associated with the need to construct new government facilities to
36 meet an increased need for public services resulting from the implementation of restoration
37 conservation measures and measures designed to reduce the effect of species-level stressors would
38 be similar to those under Alternative 1A. Potential variation from Alternative 1A would be
39 anticipated to be minor but could result from the selection of different areas for restoration
40 activities based on the location of the physical water conveyance features associated with each
41 alternative. Because the location for the implementation of conservation activities is not known at
42 this point, it is not possible to determine whether the construction of conservation measures would
43 require demolition and replacement of a government facility.

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

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

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

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

33 The locations, construction, and operational details for these and other conservation components
34 have not been identified. Adverse effects due to the construction, operation and maintenance
35 activities associated with the conservation components are not expected to result in the need for
36 new government facilities to provide public services or the need for new or expanded water or
37 wastewater treatment facilities based on increased demand. Potential effects of implementing
38 conservation measures on law enforcement, fire protection and emergency response services within
39 the ROAs would not be adverse with the incorporation of environmental commitments into this
40 alternative and would minimize construction-related accidents associated with hazardous materials
41 spills, contamination, and fires that may result from construction of the conservation measures.
42 However, there is a potential for the disruption or relocation of utility infrastructure, which has the
43 potential to result in an adverse effect. Further, no substantive adverse effects to solid waste
44 management facilities are anticipated. However, because the location and construction and
45 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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

22 **NEPA Effects:** Potential effects associated with an increased demand for solid waste management
23 providers in the Plan Area and surrounding communities as a result of waste generated from
24 construction of the proposed water conveyance facilities would be similar to those described under
25 Alternative 1B. Minor additional demands may result from construction of an operable barrier.
26 Under Alternative 2B, the total volume of excavated material that would require disposal at a landfill
27 during the construction period (58.25 tons) represents a negligible impact on the 11 solid waste
28 landfills which have a total remaining permitted capacity of over 300 million tons. Of the estimated
29 376,449 tons of construction debris that would be generated under this alternative, it assumed that
30 350,097 tons would be divertible, and that at least 50% (or 188,225) of construction waste would
31 be diverted (in accordance with diversion requirements set forth by the State Agency Model IWMA).
32 This alternative is not expected to impact the lifespan of area landfills, because over 70% of the
33 remaining permitted capacity is associated with landfills with expected lifespans of between 18 and
34 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste
35 disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B,
36 *Environmental Commitments*) would require development of a project specific construction debris
37 recycling and diversion program to achieve a documented 50% diversion of construction waste.
38 Therefore, after consideration of diversion requirements, the volume of construction debris that
39 require disposal at landfills represents a negligible effect on the remaining permitted capacity of
40 Plan Area landfills, and is not expected to exceed this capacity. Construction of Alternative 2B would
41 not create solid waste in excess of the permitted capacity of area landfills, nor would it adversely
42 affect the expected lifespan of these solid waste facilities. There would be no adverse effect.

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

1 proposed water conveyance facilities would not cause any exceedance of landfill capacity. This
2 alternative is not expected to impact the lifespan of area landfills, because over 70% of the
3 remaining permitted capacity is associated with landfills with expected lifespans of between 18 and
4 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste
5 disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B,
6 *Environmental Commitments*) would require development of a project specific construction debris
7 recycling and diversion program to achieve a documented 50% diversion of construction waste.
8 Construction of Alternative 2B would not create solid waste in excess of the permitted capacity of
9 area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities.
10 Therefore, there would be a less than significant impact on solid waste management facilities. No
11 mitigation is required.

12 **Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed** 13 **Water Conveyance Facilities**

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

4 **Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the** 5 **Proposed CM2–CM11**

6 **NEPA Effects:** Potential effects associated with the need to construct new government facilities to
7 meet an increased need for public services resulting from the implementation of restoration
8 conservation measures and measures designed to reduce the effect of species-level stressors would
9 be similar to those described under Alternative 1B. Potential variations from Alternative 1B would
10 be anticipated to be minor but could result from the selection of different areas for restoration
11 activities based on the location of the physical water conveyance features associated with each
12 alternative. Potential effects of implementing conservation components on law enforcement, fire
13 protection, and emergency response services within the ROAs would primarily involve demand for
14 services related to construction site security and construction-related accidents. This effect would
15 not be considered adverse with the implementation of environmental commitments to provide 24-
16 hour onsite private security services at construction areas and environmental commitments to
17 minimize construction-related accidents associated with hazardous materials spills, contamination,
18 and fires that may result from construction of the conservation components, as described in
19 Appendix 3B, *Environmental Commitments*.

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

27 Effects on municipal water facilities from conservation components would be similar to Alternative
28 1B with potential variations arising from the selection of different locations for habitat restoration
29 or enhancement. Some activities associated with these measures could require municipal water and
30 wastewater treatment services; however, because the location and construction and operational
31 details (i.e., water consumption and water sources associated with conservation components) of
32 these facilities and programs have not yet been developed, the need for new or expanded water or
33 wastewater treatment facilities is uncertain and this effect would be considered adverse.

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

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

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

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

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

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

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

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

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

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

41 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

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

9 **Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the** 10 **Proposed Water Conveyance Facilities**

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

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

17 **Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water** 18 **Conveyance Facilities**

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

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

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

38 **Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of** 39 **Constructing the Proposed Water Conveyance Facilities**

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

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

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

15 **Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during** 16 **Construction of the Proposed Water Conveyance Facilities**

17 **NEPA Effects:** Potential effects associated with an increased demand for solid waste management
18 providers in the Plan Area and surrounding communities as a result of waste generated from
19 construction of the proposed water conveyance facilities would be similar to those described under
20 Alternative 1C. A minor potential difference could result from the construction of an operable
21 barrier. Overall, the construction waste that could be generated by implementing Alternative 2C
22 would be similar to Alternative 1C, and would not adversely affect capacity of available landfills
23 because it represents a negligible amount of the total remaining permitted capacity of Plan Area
24 landfills, and is not expected to exceed this capacity. Further, at least 50% of construction waste
25 would be diverted (diversion requirements set forth by the State Agency Model IWMA). This
26 alternative is not expected to impact the lifespan of area landfills, because over 70% of the
27 remaining permitted capacity is associated with landfills with expected lifespans of between 18 and
28 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste
29 disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B,
30 *Environmental Commitments*) would require development of a project specific construction debris
31 recycling and diversion program to achieve a documented 50% diversion of construction waste.
32 Construction of Alternative 2C would not create solid waste in excess of the permitted capacity of
33 area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There
34 would be no adverse effect.

35 **CEQA Conclusion:** Based on the capacity of the landfills in the region, and the waste diversion
36 requirements set forth by the State of California, it would be expected that construction of the
37 proposed water conveyance facilities would not cause any exceedance of landfill capacity. This
38 alternative is not expected to impact the lifespan of area landfills, because over 70% of the
39 remaining permitted capacity is associated with landfills with expected lifespans of between 18 and
40 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste
41 disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B,
42 *Environmental Commitments*) would require development of a project specific construction debris
43 recycling and diversion program to achieve a documented 50% diversion of construction waste.
44 Construction of Alternative 2C would not create solid waste in excess of the permitted capacity of
45 area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities.

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

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

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

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

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

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

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

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

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

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

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

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

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

3 **NEPA Effects:** Similar to Alternative 1C, the proposed water conveyance facilities under Alternative
4 2C would be operated to provide diversions up to a total of 15,000 cfs from the new north Delta
5 intakes. Potential effects associated with operation and maintenance of water conveyance facilities
6 would be similar to those described under Alternative 1C. Therefore, Alternative 2C would not result
7 in physical impacts associated with the provision of new or physically altered government facilities.

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

15 Similar to Alternative 1C, the operation and maintenance activities associated with the proposed
16 water conveyance facilities are not expected to generate solid waste sufficient to create an increase
17 in demand for solid waste management providers in the Plan Area and surrounding communities.
18 Therefore, there would be no adverse effect to solid waste management facilities under Alternative
19 2C.

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

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

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

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

37 **NEPA Effects:** Potential effects associated with the need to construct new government facilities as a
38 result of increased need for public services due to the implementation of restoration conservation
39 components and those measures designed to reduce the effect of species-level stressors would be
40 similar to those described under Alternative 1C. Potential variation from Alternative 1C would be
41 anticipated to be minor but could result from the selection of different areas for restoration
42 activities based on the location of the physical water conveyance features associated with each

1 alternative, including the potential construction of an operable barrier at the Head of Old River.
2 Because the location for the implementation of conservation activities is not known at this point, it is
3 not possible to determine whether the construction of conservation components would require
4 demolition and replacement of a government facility.

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

15 Effects on municipal water facilities from conservation components would be similar to Alternative
16 1C with potential variations arising from the selection of different locations for habitat restoration
17 or enhancement, including locations related to the potential operable barrier at the Head of Old
18 River. Some activities associated with these measures could require municipal water and
19 wastewater treatment services; however, because the location and construction and operational
20 details (i.e., water consumption and water sources associated with conservation components) for
21 these facilities and programs have not yet been developed, the need for new or expanded water or
22 wastewater treatment facilities is uncertain.

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

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

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

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

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

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

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

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

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

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

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

32 **20.3.3.8 Alternative 3—Dual Conveyance with Pipeline/Tunnel and**
 33 **Intakes 1 and 2 (6,000 cfs; Operational Scenario A)**

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

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

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

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

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

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

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

30 **Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the** 31 **Proposed Water Conveyance Facilities**

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

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

38 **Impact UT-3: Effects on Public Schools as a Result of Constructing the Proposed Water** 39 **Conveyance Facilities**

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

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

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

14 **Impact UT-4: Effects on Water or Wastewater Treatment Services and Facilities as a Result of** 15 **Constructing the Proposed Water Conveyance Facilities**

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

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

37 **Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during** 38 **Construction of the Proposed Water Conveyance Facilities**

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

1 construction waste that could be generated by implementing Alternative 3 would not adversely
 2 affect capacity of available landfills because it represents a negligible amount of the total remaining
 3 permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. Further, at least
 4 50% of construction waste would be diverted (diversion requirements set forth by the State Agency
 5 Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over
 6 70% of the remaining permitted capacity is associated with landfills with expected lifespans of
 7 between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities,
 8 when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix
 9 3B, *Environmental Commitments*) would require development of a project specific construction
 10 debris recycling and diversion program to achieve a documented 50% diversion of construction
 11 waste. Construction of Alternative 3 would not create solid waste in excess of the permitted capacity
 12 of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities.
 13 There would be no adverse effect.

14 **CEQA Conclusion:** Based on the capacity of the landfills in the region, and the waste diversion
 15 requirements set forth by the State of California, it would be expected that construction of the
 16 proposed water conveyance facilities would not cause any exceedance of landfill capacity. This
 17 alternative is not expected to impact the lifespan of area landfills, because over 70% of the
 18 remaining permitted capacity is associated with landfills with expected lifespans of between 18 and
 19 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste
 20 disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B,
 21 *Environmental Commitments*) would require development of a project specific construction debris
 22 recycling and diversion program to achieve a documented 50% diversion of construction waste.
 23 Construction of Alternative 3 would not create solid waste in excess of the permitted capacity of
 24 area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities.
 25 Therefore, there would be a less than significant impact on solid waste management facilities.

26 **Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed** 27 **Water Conveyance Facilities**

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

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

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

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

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

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

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

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

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

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

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

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

19 *NEPA Effects:* The proposed water conveyance facilities under this alternative would be operated to
 20 provide diversions up to a total of 6,000 cfs from two new north Delta intakes, rather than 15,000
 21 cfs from five intakes under Alternative 1A. However, potential effects associated with operation and
 22 maintenance of water conveyance facilities would be similar to those described under Alternative
 23 1A. Therefore, Alternative 3 would not result in physical impacts associated with the provision of
 24 new or physically altered government facilities.

25 Because requirements for water and wastewater treatment under operations and maintenance of
 26 the water conveyance facilities would be primarily associated with intakes and intake pumping
 27 plant facilities, these effects would be similar to but smaller than those described under Alternative
 28 1A because this alternative would build two intake facilities rather than five. Quantities of water
 29 needed for these purposes would be anticipated to be relatively small compared with municipal
 30 supplies. Additionally, water supplies and wastewater treatment services would potentially be
 31 provided by non-municipal facilities.

32 Similar to Alternative 1A, the operation and maintenance activities associated with the proposed
 33 water conveyance facilities are not expected to generate solid waste such that there would be an
 34 increase in demand for solid waste management providers in the Plan Area and surrounding
 35 communities. Because Alternative 3 includes only two intakes (as opposed to five under Alternative
 36 1A), the volume of solids generated from the sediment load within the river would be less than the
 37 volume estimates described under Alternative 1A.

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

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

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

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

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

18 **NEPA Effects:** Potential effects associated with the need to construct new government facilities to
 19 meet an increased need for public services resulting from the implementation of restoration
 20 conservation components and those measures designed to reduce the effect of species-level
 21 stressors would be similar to those described under Alternative 1A. Potential variation from
 22 Alternative 1A would be anticipated to be minor but could result from the selection of different
 23 areas for restoration activities based on the location of the physical water conveyance features
 24 associated with each alternative. Because the location for the implementation of conservation
 25 activities is not known at this point, it is not possible to determine whether the construction of
 26 conservation components would require demolition and replacement of a government facility.

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

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

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

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

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

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

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

33 **CEQA Conclusion:** Implementation of the proposed conservation components would not likely
34 require alteration or construction of new government facilities due to increased need for public
35 services and utilities. Several measures to reduce stressors on covered species could result in water
36 supply requirements, but are not expected to require substantial increases in demand on municipal
37 water and wastewater treatment services. Construction and operation activities associated with the
38 proposed conservation components would result in a less than significant impact on solid waste
39 management facilities based upon the capacity of the landfills in the region, and the waste diversion
40 requirements set forth by the State of California. Potential impacts of implementing conservation
41 components on law enforcement, fire protection and emergency response services within the ROAs
42 would be less than significant with the incorporation of environmental commitments into this
43 alternative and would minimize construction-related accidents associated with hazardous materials
44 spills, contamination, and fires that may result from construction of the conservation components.
45 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

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

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

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

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

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

34 **Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the** 35 **Proposed Water Conveyance Facilities**

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

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

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

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

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

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

32 **CEQA Conclusion:** The majority of construction jobs are expected to be filled by workers from the
 33 existing five-county labor force. The incremental increase in school-age children of construction
 34 personnel moving into the area for specialized construction jobs (e.g., tunnel construction) would
 35 likely be distributed through a number of schools within the Plan Area. This increase in school
 36 enrollment would not be substantial enough to exceed the capacity of any individual school or
 37 district, or to warrant construction of a new facility or alteration of an existing facility within the
 38 Plan Area. The impact is less than significant. No mitigation is required¹⁸.

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].)

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

3 **NEPA Effects:** Construction of the proposed water conveyance facilities would require water supply
 4 and wastewater treatment services. While general construction activities including dust control and
 5 soil compaction would require a supply of water, for purposes of this analysis, the major potable
 6 water supply needs would be for the concrete batch plants (see Chapter 3, *Description of*
 7 *Alternatives*) and field offices during construction. Potable water supply needed for construction
 8 was calculated based on the amount of concrete required for this alternative and the amount of
 9 water required by the field offices. Under this alternative, four concrete batch plants would be
 10 constructed onsite for temporary use during construction. Each batch concrete plant would require
 11 fresh water for batching, dust control, and washing requirements (including concrete truck
 12 washout). The potable water supply estimates also considered the number of field offices needed for
 13 each alternative and assumed that each field office would have an average of 10 workers, an average
 14 of 40 gallons of water would be consumed per person per day (including drinking, hand washing,
 15 and toilet use), and would be operational for 3,285 days (i.e., 9 years at 365 days per year¹⁹). Table
 16 20-3 presents the estimated potable water supply required for concrete (by each type of facility)
 17 and for field offices.

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

32 Tunnel boring would create a substantial amount of wastewater. This material, part of the RTM,
 33 would also include soils, foaming agents, and other materials. This analysis assumes that RTM would
 34 undergo treatment in isolated RTM storage areas located throughout the Plan Area (see Figure M3-4
 35 in the Mapbook Volume), and therefore, wastewater related to tunnel boring RTM would not require
 36 treatment at wastewater treatment facilities. As part of the alternative, DWR would implement an
 37 environmental commitment (as discussed in Appendix 3B, *Environmental Commitments*) that would
 38 dispose of and reuse spoils, reusable tunnel material, and dredged material. Concrete batch plants
 39 would also create wastewater, which would be treated onsite at designated concrete batch plant
 40 sites. Wastewater generated during construction at field offices and temporary construction
 41 facilities will be served by temporary portable facilities (e.g., portable toilets). As discussed in
 42 Chapter 8, *Water Quality*, as part of the *Environmental Commitments* (Appendix 3B) for each
 43 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.

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

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

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

23 **Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during** 24 **Construction of the Proposed Water Conveyance Facilities**

25 **NEPA Effects:** Alternative 4 would only require construction of three intake facilities as opposed to
 26 five intakes; however, Alternative 4 would also involve constructing an operable barrier at the Head
 27 of Old River, which could create some solid waste. Overall, the construction waste that could be
 28 generated by implementing Alternative 4 would not adversely affect capacity of available landfills
 29 because it represents a negligible amount of the total remaining permitted capacity of Plan Area
 30 landfills, and is not expected to exceed this capacity. Further, at least 50% of construction waste
 31 would be diverted (diversion requirements set forth by the State Agency Model IWMA). This
 32 alternative is not expected to impact the lifespan of area landfills, because over 70% of the
 33 remaining permitted capacity is associated with landfills with expected lifespans of between 18 and
 34 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste
 35 disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B,
 36 *Environmental Commitments*) would require development of a project specific construction debris
 37 recycling and diversion program to achieve a documented 50% diversion of construction waste.
 38 Construction of Alternative 4 would not create solid waste in excess of the permitted capacity of
 39 area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There
 40 would be no adverse effect.

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

1 Alternative 4, is estimated to generate 17,846 tons of excavated material. Construction of tunnel
 2 segments under this alternative would require disposal of RTM, which is a mix of soils cutting and
 3 soil conditioning agents (water, air, bentonite, foaming agents, and/or polymers or biopolymers). As
 4 part of the alternative, DWR would implement an environmental commitment (as discussed in
 5 Appendix 3B, *Environmental Commitments*) that would dispose of and reuse spoils, RTM, and
 6 dredged material. Before RTM can be reused or reintroduced to the environment, it must be
 7 managed and treated. Construction of the BDCP alternatives would utilize the controlled storage
 8 method; under this approach, soils, RTM, and dredged material would be transported to designated
 9 RTM work areas for the temporary storage of these materials. Based on a review of the typical
 10 additives in RTM, it is assumed that the RTM can be disposed of onsite; however, to be conservative,
 11 an estimated 0.1% of the excavated waste, accounting for any hazardous substances or wastes
 12 coming from farming operations or previous land uses, would require disposal at a landfill²⁰. Based
 13 on these assumptions, up to 17.85 tons (i.e., 0.1% of 17,846 tons) of excavated materials would
 14 require disposal at a landfill. Under this alternative, the total volume of excavated material that
 15 would require disposal at a landfill during the construction period (17.85 tons) represents a
 16 negligible impact on the 11 solid waste landfills, which have a total remaining permitted capacity of
 17 over 300 million tons or 440.25 million cubic yards (Appendix 20A).

18 Construction debris, including debris from structure demolition, power poles, utility lines, piping,
 19 and other materials would also be generated as a result of construction of this alternative. For
 20 purposes of this analysis, the volume of construction debris generated during construction was
 21 based on estimated truck trips that were assumed to be potentially associated with disposal of
 22 construction debris at a landfill. This includes all trips by trucks categorized as Heavy Construction
 23 T7 that are likely to carry debris (flatbed, dump, and tractor) detailed in Chapter 22, *Air Quality and*
 24 *Greenhouse Gases* (Table 22B-4 of Appendix 22B, *Air Quality Assumptions*). Under this alternative,
 25 there would be approximately 21 outbound trips per day, or 47,268 trips over the 9-year
 26 construction period²¹. One truck typically holds approximately 20 cubic yards of material.
 27 Therefore, an average of 420 cubic yards (302 tons) would be generated per day, totaling 952,552
 28 cubic yards (685,837 tons²²) of construction debris over the 9-year construction period.

29 Although it is not known specifically which landfills would be utilized during construction of the
 30 proposed water conveyance facilities, disposal of demolition and excavated material would be
 31 expected to occur at several different locations depending on the type of material and its origin. It is
 32 standard practice that the construction contractors handle and dispose of all hazardous and non-
 33 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.

1 are 30 active facilities that can handle solid waste, including 11 solid waste landfills with a
 2 remaining permitted capacity of well over 300 million tons, and 18 large volume
 3 transfer/processing facilities (see Appendix 20A, Table 20A-6 for a listing of each facility's name,
 4 location, permitted capacity, remaining capacity, maximum permitted daily throughput, and
 5 proximity to the statutory Delta). According to the CalRecycle SWIS, the 11 solid waste landfills
 6 within the study area have estimated "cease operation" dates²³ ranging from between 2016 and
 7 2082. Of the remaining permitted capacity at area landfills, approximately 70% of the capacity is
 8 associated with landfills that are not expected to close for 18 to 70 more years (CalRecycle 2012).

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

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

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

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

37 While a 90% diversion rate is not always feasible in every instance, the State Agency Model IWMA
 38 (Chapter 764, Statutes of 1999, Strom-Martin) which took effect on January 1, 2000 as part of AB 75,
 39 requires that each state agency (including DWR) is mandated to develop and implement an IWMP.
 40 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).

1 least 50% of their solid waste from disposal facilities on and after January 1, 2004. Another
 2 requirement of the law is that each state agency and large facility is to submit an annual report to
 3 CalRecycle summarizing its yearly progress in implementing waste diversion programs. All solid
 4 waste management activities for the construction and operations and maintenance associated with
 5 Alternative 4 would be conducted in accordance with regulations set forth by CalRecycle, and any
 6 applicable IWMP developed for affected jurisdictions. Although it is not known which landfills will
 7 be utilized during construction of the proposed water conveyance facilities, as construction
 8 contractors will handle disposal of demolition and excavated material, it is assumed that at least
 9 50% of waste (342,919 tons) will be diverted in compliance with the provisions of the IWMA.
 10 Therefore, after consideration of diversion requirements, the volume of construction debris that
 11 requires disposal at landfills (342,919 tons, at most) represents a negligible effect on the remaining
 12 permitted capacity of Plan Area landfills, and is not expected to exceed this capacity.

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

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

38 **Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed** 39 **Water Conveyance Facilities**

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

1 Due to the nature of underground construction, the exact location of underground utilities cannot be
2 guaranteed based on construction documents but can only be determined by careful probing or
3 hand digging, in compliance with Article 6 of the Cal/OSHA Construction Safety Orders.

4 Underground Service Alert, a service which provides utility location services, is not available until
5 the time of construction. Construction activities for Alternative 4 could result in damage to or
6 interference with existing water, sewer, storm drain, natural gas, oil, electric, and/or communication
7 lines and, in some cases, could require that existing lines be permanently relocated, potentially
8 causing interruptions in service. Numerous utility lines of varying sizes are located along and across
9 the pipeline/tunnel alignment and at the various pumping plants and forebay sites.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

22 New poles or towers will be erected and cable-pulled prior to being connected to existing
23 systems. Natural gas pipeline relocation will be constructed by one of several methods including
24 cut-and-cover, trenching, or placement on at-grade saddles. Active natural gas wells in the
25 proposed water conveyance facilities area will be abandoned to a depth below the tunnel.

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

- 28 • New or modified irrigation pumping plants.
- 29 • Extended delivery pipes.
- 30 • New or modified drainage ditches.
- 31 • New or modified drainage pumping plants.

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

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

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

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

9 ***NEPA Effects:***

10 **Public Services**

11 Operation and maintenance activities would require minimal labor. The proposed water conveyance
12 facilities under this alternative would be operated to provide diversions up to a total of 9,000 cfs
13 from three new north Delta intakes.

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

24 **Utilities**

25 ***Water and Wastewater***

26 Operation and maintenance of Alternative 4 facilities would involve use of water for pressure
27 washing intake screen panels and basic cleaning of building facilities and other equipment.
28 Additionally, pumping plants would include permanent restroom facilities, which would be
29 equipped with a sanitary gravity drainage leading to a wastewater holding tank. A potable water
30 system would provide water to pumping plant welfare facilities and, if required, safety showers.
31 This supply would be taken from the nearest clean water conveyance system, if available. If not
32 available, pumping plants would be designed to include a self-contained water filtration and
33 treatment system. Raw water downstream would be evaluated for potential use in a non-potable
34 system serving hose faucets and water-cooled condensing units for plant equipment. Small amounts
35 of additional services may result from the operation and maintenance of an operable barrier.
36 Quantities of water needed for these purposes would be anticipated to be relatively small compared
37 with municipal supplies. Additionally, water supplies and wastewater treatment services would
38 potentially be provided by non-municipal facilities. The operation and maintenance of the proposed
39 water conveyance facilities would not result in the need for new water supply entitlements, or
40 require construction of new water or wastewater treatment facilities or expansion of existing
41 facilities.

1 **Solid Waste**

2 The operation and maintenance of the proposed water conveyance facilities under Alternative 4
3 would not be expected to generate solid waste such that there would be an increase in demand for
4 solid waste management providers in the Plan Area and surrounding communities. Operation and
5 maintenance of the proposed water conveyance facilities would involve a sedimentation basin that
6 would be constructed between the intake structure and the pumping plant to collect sediment load
7 from the river. Although the intake fish screens would remove debris and sediment from the intake
8 inflow, a sedimentation basin would be constructed to remove the suspended solids that pass
9 through the screen.

10 The volume of solids generated on a daily basis would depend on the volume of water pumped
11 through the intakes, as well as the sediment load of the river. Based on a worst-case scenario,
12 considering the throughput of the intakes at a maximum flow of 3,000 cfs, an estimated 82,200 dry
13 pounds of solids per day would be pumped to the solids lagoons. During periods of high sediment
14 load in the Sacramento River, the daily mass of solids would be expected to increase up to 253,000
15 dry pounds per day. The annual volume of solids is anticipated to be approximately 291,600 cubic
16 feet (dry solids).

17 As designed, it is anticipated that a portion of the solids would be stored and reused at alternative
18 facilities and some portion would be transported for offsite disposal. Additionally, maintenance
19 activities related to the operable barrier could involve the removal of additional sediments. Solids
20 from sediment load would not exceed the permitted capacity or adversely impact the lifespan of
21 area landfills.

22 **Electricity and Natural Gas**

23 Operation and maintenance of water conveyance facilities under this alternative would require new
24 permanent transmission lines for intakes, pumping plants, operable barriers, boat locks, and gate
25 control structures throughout the various proposed conveyance alignments and construction of
26 project facilities. Electrical power to operate the new north Delta pumping plant facilities would be
27 delivered through new transmission lines that would connect to the existing grid in the northern
28 section of the conveyance alignment. The northern point of interconnection would be located north
29 of Lambert Road and west of Highway 99. From here, a 230 kV transmission line would run west,
30 along Lambert Road, where one segment would run south to the intermediate forebay on Glannvale
31 Tract, and one segment would run north to connect to a substation, where 69 kV lines would
32 connect to the intake pumping plants, as shown in Figure 3-25. Three utility grids could supply
33 power to the BDCP conveyance facilities: PG&E (under the control of the California Independent
34 System Operator), Sacramento Municipal Utility District (SMUD), and the Western Area Power
35 Administration (WAPA). The electrical power needed for the conveyance facilities would be
36 procured in time to support construction and operation of the facilities.

37 Construction of permanent transmission lines would not require improvements to the existing
38 physical power transmission system. As such, operation and maintenance activities associated with
39 the proposed water conveyance facilities would not be expected to result in the disruption or
40 relocation of utilities. Effects associated with energy demands of operation and maintenance of the
41 proposed water conveyance facilities are addressed in Chapter 21, *Energy*.

42 Overall, operation and maintenance of the conveyance facilities under Alternative 4 would not result
43 in adverse effects on service demands, water capacity, wastewater and solid waste facilities nor

1 conflict with local and regional utility lines because demand for law enforcement and fire protection
 2 services would be temporary over a six-county area, new water and wastewater treatment service
 3 would be handled onsite, and adequate solid waste disposal capacity exists to handle construction
 4 waste. There would not be an adverse effect.

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

12 **Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the** 13 **Proposed CM2–CM11**

14 **NEPA Effects:** Alternative 4 would restore up to 83,900 acres under conservation components to
 15 restore tidal habitat, seasonally inundated floodplain, grassland communities, vernal pool complex
 16 habitat, and nontidal marsh areas. Additionally, 20 linear miles of channel margin habitat would be
 17 enhanced. While locations of conservation components have not been selected, implementation of
 18 conservation components for habitat restoration and channel margin habitat enhancement would
 19 occur within the ROAs described in Chapter 3, *Description of Alternatives*.

20 **Public Services**

21 Potential effects of implementing conservation components on law enforcement, fire protection, and
 22 emergency response services within the ROAs would primarily involve demand for services related
 23 to construction site security and construction-related accidents. Because of the scale and duration
 24 of construction associated with implementing conservation components, there could be an
 25 increased demand for these public services. This effect would not be considered adverse with the
 26 implementation of environmental commitments to provide onsite private security services at
 27 construction areas and environmental commitments that would minimize the potential for
 28 construction-related accidents associated with hazardous materials spills, contamination, or fires, as
 29 described in Appendix 3B, *Environmental Commitments*. These environmental commitments would
 30 be incorporated into this alternative and would provide for onsite security at construction sites and
 31 minimize construction-related accidents associated with hazardous materials spills, contamination,
 32 and fires that may result from construction of the conservation components. Further, the ROAs
 33 extend beyond the statutory Delta so the increase in demand for services would be distributed
 34 across the study area. Implementing the proposed conservation components would not result in
 35 effects associated with the need to construct new government facilities as a result of increased need
 36 for public services (i.e., law enforcement, fire protection, emergency responders, hospitals, public
 37 schools, libraries). Because the location for the implementation of conservation activities is not
 38 known at this point, it is not possible to determine whether the construction of conservation
 39 components would require demolition and replacement of a government facility.

1 **Utilities**

2 ***Water and Wastewater***

3 Implementation of some of the conservation components, in particular those involved with
4 restoration and enhancement of some habitat types, could require a water supply, but would not
5 require city or county treated water sources. Conservation components that could increase need for
6 water supply are restoration of tidal, seasonally inundated floodplain, channel margin, riparian,
7 grassland, vernal pool complex, and nontidal marsh habitats; and maintenance of these habitats as
8 well as alkali seasonal wetland complex, and managed wetlands habitats. Additionally, measures
9 related to the reduction of stressors on covered species would not generally require a treated water
10 supply or generate wastewater. Exceptions to this would potentially include the establishment of a
11 new fish hatchery, expansion of facilities to support dissolved oxygen levels in the Stockton Deep
12 Water Ship Channel, and activities to reduce the risk of invasive species introduction on recreational
13 vessels. For example, boat cleaning stations proposed under the Recreational Users Invasive Species
14 Program (CM20) would potentially draw substantial amounts of water from city or county treated
15 water supplies. Because the location and construction or operational details (i.e., water consumption
16 and water sources associated with conservation components of these facilities and programs have
17 not yet been developed, the need for new or expanded water or wastewater treatment facilities is
18 uncertain.

19 ***Solid Waste***

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

33 ***Electricity and Natural Gas***

34 Conservation components including habitat restoration and enhancement would, in some cases,
35 involve substantial earthwork and ground disturbance. As discussed above under Impact UT-6,
36 construction could potentially disrupt utility services, and ground disturbance has potential to
37 damage underground utilities. The long-term conversion of existing utility corridors to habitat
38 purposes could require the relocation of utility infrastructure, which could carry environmental
39 effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of
40 these effects.

41 Alternative 4 would restore, enhance, and protect thousands of acres of habitat, including the
42 restoration of up to 65,000 acres of tidal habitat. The locations, construction, and operational details
43 for these and other conservation components have not been identified. Adverse effects due to the

1 construction, operation and maintenance activities associated with the conservation components
2 are not expected to result in the need for new government facilities to provide public services or the
3 need for new or expanded water or wastewater treatment facilities based on increased demand.
4 Environmental commitments into this alternative and would minimize construction-related
5 accidents associated with hazardous materials spills, contamination, and fires that may result from
6 construction of the conservation components. However, there is a potential for the disruption or
7 relocation of utility infrastructure, which has the potential to result in an adverse effect. Further, no
8 substantive adverse effects to solid waste management facilities are anticipated. Because the
9 location and construction and operational details (i.e., water consumption and water sources
10 associated with conservation components) related to these facilities and programs have not yet
11 been developed, the need for new or expanded water or wastewater treatment facilities is uncertain.
12 This effect would be adverse.

13 **CEQA Conclusion:** Implementation of the proposed conservation components would not likely
14 require alteration or construction of new government facilities due to increased need for public
15 services and utilities. Several measures to reduce stressors on covered species could result in water
16 supply requirements, but are not expected to require substantial increases in demand on municipal
17 water and wastewater treatment services. Construction and operation activities associated with the
18 proposed conservation components would result in a less than significant impact on solid waste
19 management facilities based upon the capacity of the landfills in the region, and the waste diversion
20 requirements set forth by the State of California. Potential impacts of implementing conservation
21 components on law enforcement, fire protection and emergency response services within the ROAs
22 would be less than significant with the incorporation of environmental commitments into this
23 alternative and would minimize construction-related accidents associated with hazardous materials
24 spills, contamination, and fires that may result from construction of the conservation components.
25 However, the location and construction and operational details (i.e., water consumption and water
26 sources associated with conservation components) of these facilities and programs have not yet
27 been developed. Therefore, the need for new or expanded water or wastewater treatment facilities
28 and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-
29 6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain
30 whether this impact would be reduced to a less than significant level. Therefore, this would be a
31 significant unavoidable impact.

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

33 Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 4.

34 **Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or** 35 **Minimizes Any Effect on Operational Reliability**

36 Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 4.

37 **Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or** 38 **Minimizes Any Effect on Worker and Public Health and Safety**

39 Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 4.

1 **20.3.3.10 Alternative 5—Dual Conveyance with Pipeline/Tunnel and**
2 **Intake 1 (3,000 cfs; Operational Scenario C)**

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

6 **NEPA Effects:** Effects related to the provision of law enforcement, fire protection, and emergency
7 response services as a result of construction of the proposed water conveyance facilities would be
8 similar to those described for Alternative 1A. Increased service demands would be experienced in
9 the communities in which new construction workers relocate and in the areas in which construction
10 would take place. However, effects on services from the presence of new workers in the Plan Area
11 would be anticipated to be somewhat less than under Alternative 1A because one intake facility
12 would be constructed rather than five.

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

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

21 Incorporation of environmental commitments that would minimize construction-related accidents
22 associated with hazardous materials spills, contamination, and fires, would minimize potential
23 effects related to the demand for law enforcement, fire protection, or emergency services (see
24 Appendix 3B, *Environmental Commitments*). Construction of Alternative 5 would not increase the
25 demand on law enforcement, fire protection, and emergency response services from new workers in
26 the Plan Area such that it would result in the need for, new or physically altered governmental
27 facilities. Impacts to emergency response times from construction traffic using emergency routes
28 are discussed in Chapter 19 Impact Trans-3. Accordingly, there would be no adverse effect.

29 **CEQA Conclusion:** The potential for impacts on law enforcement and fire services and facilities is
30 not expected to be significant because the estimated increase in population in the Plan Area
31 associated with construction of the alternative during peak construction would be distributed over
32 multiple cities and counties within the Plan Area. In addition, environmental commitments would be
33 incorporated into the alternative to reduce demand for law enforcement, fire protection, and
34 emergency response services at or near construction sites from new construction workers in the
35 Plan Area, and effects on local law enforcement agencies associated with construction property
36 protection. Construction of Alternative 5 would not require new or physically altered governmental
37 facilities to support the needs of new workers in the Plan Area. These impacts would be considered
38 less than significant. No mitigation is required.

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

3 **NEPA Effects:** Under Alternative 5, construction of the proposed water conveyance facilities would
4 not conflict with a public facility, and therefore, would not require the construction or major
5 alteration of such facilities. This effect would not be adverse.

6 **CEQA Conclusion:** Construction of the proposed water conveyance facilities under Alternative 5
7 would not require the construction or major alteration of such facilities. Therefore, this impact
8 would be less than significant. No mitigation is required.

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

11 **NEPA Effects:** Effects on public schools as a result of construction of the proposed water conveyance
12 facilities would be similar to those described for Alternative 1A. However, the construction worker
13 population increase and associated school-age children who would enroll in public schools would be
14 less because Alternative 5 would only require construction of one intake facility instead of five. The
15 minor increase in school-age children of construction personnel moving into the area for specialized
16 jobs (e.g., tunnel construction) would likely be distributed through a number of schools within the
17 Plan Area. This increase would not be substantial enough to exceed the capacity of any identified
18 school or district, or to warrant construction of a new facility. There would not be an adverse effect.

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

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

28 **NEPA Effects:** Effects related to the need for expanded water or wastewater treatment facilities
29 would be similar to those for Alternative 1A. Under this alternative, however, concrete batch plants
30 would require a smaller quantity of water for concrete production because only one intake facility
31 (and the associated conveyance pipelines and other structures) would be constructed. Based on the
32 number of major structures associated with this alternative, it is estimated that 12 field offices
33 would be needed, which would use 15 million gallons of water. In addition, 54 million gallons of
34 water would be used for activities associated with concrete batch plants. The total potable water
35 supply needed under this alternative is estimated to be 70 million gallons (Table 20-3). While water
36 supply needs would still be substantial, these requirements would be temporary and could be met
37 with non-municipal water sources without any new water supply entitlements. Also similar to
38 Alternative 1A, wastewater created as a result of tunnel boring and concrete batching would be
39 treated onsite at isolated RTM storage areas and designated concrete batch plant sites, respectively.
40 Construction of Alternative 5 would not require or result in the construction of new water or
41 wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

1 **CEQA Conclusion:** While construction of this alternative would require a substantial supply of
 2 water, this supply could be met by non-municipal sources. Additional needs for wastewater
 3 treatment and potable water could also be served by non-municipal entities. Construction of
 4 Alternative 5 would not require or result in the construction of new water or wastewater treatment
 5 facilities or expansion of existing facilities. This impact would be considered less than significant.
 6 Mitigation is not required.

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

9 **NEPA Effects:** Potential effects associated with an increased demand for solid waste management
 10 providers in the Plan Area and surrounding communities as a result of waste generated from
 11 construction of the proposed water conveyance facilities would be similar to those described under
 12 Alternative 1A. However, there would be less solid waste generated as a result of construction
 13 because Alternative 5 would only require construction of one intake facility. Overall, the
 14 construction waste that could be generated by implementing Alternative 5 would not adversely
 15 affect capacity of available landfills because it represents a negligible amount of the total remaining
 16 permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. Further, at least
 17 50% of construction waste would be diverted (diversion requirements set forth by the State Agency
 18 Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over
 19 70% of the remaining permitted capacity is associated with landfills with expected lifespans of
 20 between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities,
 21 when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix
 22 3B, *Environmental Commitments*) would require development of a project specific construction
 23 debris recycling and diversion program to achieve a documented 50% diversion of construction
 24 waste. Construction of Alternative 5 would not create solid waste in excess of the permitted capacity
 25 of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities.
 26 There would be no adverse effect.

27 **CEQA Conclusion:** Based on the capacity of the landfills in the region, and the waste diversion
 28 requirements set forth by the State of California, it would be expected that construction of the
 29 proposed water conveyance facilities would not cause any exceedance of landfill capacity. This
 30 alternative is not expected to impact the lifespan of area landfills, because over 70% of the
 31 remaining permitted capacity is associated with landfills with expected lifespans of between 18 and
 32 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste
 33 disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B,
 34 *Environmental Commitments*) would require development of a project specific construction debris
 35 recycling and diversion program to achieve a documented 50% diversion of construction waste.
 36 Construction of Alternative 5 would not create solid waste in excess of the permitted capacity of
 37 area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities.
 38 Therefore, there would be a less than significant impact on solid waste management facilities. No
 39 mitigation is required.

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

42 **NEPA Effects:** Disruption of utilities and relocation of existing utility facilities under Alternative 5
 43 would be similar to those described for Alternative 1A. However, because Alternative 5 would only
 44 construct Intake 1, implementing it would avoid potential conflicts associated with Intakes 2, 3, 4, 5.

1 The conveyance alignment constructed under this alternative would cross or interfere with
 2 approximately 37 miles of agricultural delivery canals and drainage ditches, including
 3 approximately 7 miles on Victoria Island, 5 miles on Bacon Island, 4 miles on Byron Tract, and 4
 4 miles on Tyler Island. The potential for construction of the proposed conveyance facilities to cause
 5 disruptions to agricultural infrastructure in the study area are addressed in Chapter 14, Agricultural
 6 Resources. Specifically, Chapter 14 addresses potential conflicts with existing agricultural irrigation
 7 and drainage facilities as a result of construction. Regional power transmission lines and one natural
 8 gas pipeline would require relocation. Additionally, active gas wells may need to be plugged and
 9 abandoned. Relocation of additional facilities near proposed forebays, RTM, and borrow or spoils
 10 areas may also be necessary. The potential damage and disruption to buried and overhead electric
 11 transmission lines would be similar for telecommunication infrastructure. Because relocation and
 12 disruption of existing utility infrastructure would be required under this alternative and would have
 13 the potential to create effects through the relocation of facilities, this alternative would result in an
 14 adverse effect on utilities.

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

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

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

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

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

31 **Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or** 32 **Minimizes Any Effect on Operational Reliability**

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

34 **Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or** 35 **Minimizes Any Effect on Worker and Public Health and Safety**

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

37 **Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance** 38 **of the Proposed Water Conveyance Facilities**

39 **NEPA Effects:** The proposed water conveyance facilities under this alternative would be operated to
 40 provide diversions up to a total of 3,000 cfs from one new north Delta intakes, rather than 15,000 cfs

1 from five intakes under Alternative 1A. However, potential effects associated with operation and
2 maintenance of water conveyance facilities would be similar to those described under Alternative
3 1A. Therefore, Alternative 5 would not result in physical impacts associated with the provision of
4 new or physically altered government facilities.

5 Because requirements for water and wastewater treatment under operations and maintenance of
6 the water conveyance facilities would be primarily associated with intakes and intake pumping
7 plant facilities, these effects would be similar to but smaller than those described under Alternative
8 1A because this alternative would build one intake facility rather than five. Quantities of water
9 needed for these purposes would be anticipated to be relatively small compared with municipal
10 supplies. Additionally, water supplies and wastewater treatment services would potentially be
11 provided by non-municipal facilities.

12 Similar to Alternative 1A, the operation and maintenance activities associated with the proposed
13 water conveyance facilities are not expected to generate solid waste such that there would be an
14 increase in demand for solid waste management providers in the Plan Area and surrounding
15 communities. Because Alternative 5 includes only one intake (as opposed to five under Alternative
16 1A), the volume of solids generated from the sediment load within the river would be substantially
17 less than the estimated volume under Alternative 1A.

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

24 Overall, operation and maintenance of the conveyance facilities under Alternative 5 would not result
25 in adverse effects on service demands, water capacity, wastewater and solid waste facilities or
26 conflict with local and regional utility lines because demand for law enforcement and fire protection
27 services would be temporary over a six-county area, new water and wastewater treatment service
28 would be handled onsite, and adequate solid waste disposal capacity exists to handle construction
29 waste. There would not be an adverse effect.

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

35 **Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the** 36 **Proposed CM2-CM11**

37 **NEPA Effects:** Potential effects associated with the need to construct new government facilities to
38 meet an increased need for public services resulting from implementation of restoration
39 conservation components and those measures designed to reduce the effect of species-level
40 stressors would be similar to those described under Alternative 1A. However, under this
41 Alternative, only 25,000 acres of tidal habitat would be restored, as compared with 65,000 under
42 Alternative 1A. Thus, implementation of tidal habitat restoration would have less potential to result

1 in demolition and replacement of a public facility than under Alternative 1A; however, potential
2 effects are unknown at this time.

3 Potential variation from Alternative 1A would be anticipated to be minor but could result from the
4 selection of different areas for restoration activities based on the location of the physical water
5 conveyance features associated with each alternative. Because the location for the implementation
6 of conservation activities is not known at this point, it is not possible to determine whether the
7 construction of conservation components would require demolition and replacement of a
8 government facility.

9 Effects on municipal water facilities from conservation components would be similar to those for
10 Alternative 1A but service demands related to tidal restoration areas would be smaller, based on a
11 target of 25,000 restored acres over the life of the project, compared with 65,000 acres for
12 Alternative 1A. Some activities associated with this and other measures could require municipal
13 water and wastewater treatment services; however, because the location and construction and
14 operational details (i.e., water consumption and water sources associated with conservation
15 components) of these facilities and programs have not yet been developed, the need for new or
16 expanded water or wastewater treatment facilities is uncertain.

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

23 Conservation components including habitat restoration and enhancement would be similar to those
24 described under Alternative 1A; however, under Alternative 5, tidal habitat restoration would be
25 limited to 25,000 acres. The implementation of conservation components could nonetheless result
26 in utility service disruption or possible damage to underground utilities. Similarly, the long-term
27 conversion of existing utility corridors to habitat purposes could require the relocation of utility
28 infrastructure, which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-
29 6c would be available to reduce the severity of these effects.

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

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

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

16 **CEQA Conclusion:** Implementation of the proposed conservation components would not likely
 17 require alteration or construction of new government facilities due to increased need for public
 18 services and utilities. Several measures to reduce stressors on covered species could result in water
 19 supply requirements, but are not expected to require substantial increases in demand on municipal
 20 water and wastewater treatment services. Construction and operation activities associated with the
 21 proposed conservation components would result in a less than significant impact on solid waste
 22 management facilities based upon the capacity of the landfills in the region, and the waste diversion
 23 requirements set forth by the State of California. Potential impacts of implementing conservation
 24 components on law enforcement, fire protection and emergency response services within the ROAs
 25 would be less than significant with the incorporation of environmental commitments into this
 26 alternative and would minimize construction-related accidents associated with hazardous materials
 27 spills, contamination, and fires that may result from construction of the conservation components.
 28 However, the location and construction and operational details (i.e., water consumption and water
 29 sources associated with conservation components) of these facilities and programs have not yet
 30 been developed. Therefore, the need for new or expanded water or wastewater treatment facilities
 31 and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-
 32 6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain
 33 whether this impact would be reduced to a less than significant level. Therefore, this would be a
 34 significant unavoidable impact.

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

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

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

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

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

42 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

1 facility (Figure 20-5). Relocation of the fire station could result in environmental effects associated
 2 with construction of a replacement facility. Implementation of Mitigation Measure UT-2 would also
 3 require the construction of a replacement facility, which could result in adverse environmental
 4 effects. Therefore, this effect would be adverse. If, however, coordination were successful,
 5 environmental commitments and mitigation measures would be adopted by the Courtland Fire
 6 District and Sacramento County and effects would not be adverse.

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

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

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

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

20 **NEPA Effects:** Effects on public schools as a result of construction of the proposed water conveyance
 21 facilities would be similar to those described for Alternative 1A. The minor increase in school-age
 22 children of construction personnel moving into the area for specialized jobs (e.g., tunnel
 23 construction) would likely be distributed through a number of schools within the Plan Area. This
 24 increase would not be substantial enough to exceed the capacity of any identified school or district,
 25 or to warrant construction of a new facility. There would not be an adverse effect.

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

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

35 **NEPA Effects:** Effects related to the need for expanded water or wastewater treatment facilities
 36 would be similar to those for Alternative 1A. While water needs are substantial, these requirements
 37 would be temporary and could be met with non-municipal water sources without any new water
 38 supply entitlements. Also similar to Alternative 1A, wastewater created as a result of tunnel boring
 39 and concrete batching would be treated onsite at isolated RTM storage areas and designated
 40 concrete batch plant sites, respectively. Construction of Alternative 6A would not require or result in
 41 the construction of new water or wastewater treatment facilities or expansion of existing facilities.
 42 This effect would not be adverse.

1 **CEQA Conclusion:** While construction of this alternative would require a substantial supply of
2 water, this supply could be met by non-municipal sources. Additional needs for wastewater
3 treatment and potable water could also be served by non-municipal entities. Construction of
4 Alternative 6A would not require or result in the construction of new water or wastewater
5 treatment facilities or expansion of existing facilities. This impact would be less than significant.
6 Mitigation is not required.

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

9 **NEPA Effects:** Potential effects associated with an increased demand for solid waste management
10 providers in the Plan Area and surrounding communities as a result of waste generated from
11 construction of the proposed water conveyance facilities would be similar to those described under
12 Alternative 1A. Under Alternative 6A, the total volume of excavated material that would require
13 disposal at a landfill during the construction period (17.85 tons) represents a negligible impact on
14 the 11 solid waste landfills which have a total remaining permitted capacity of over 300 million tons.
15 Of the estimated 603,469 tons of construction debris that would be generated under this alternative,
16 it assumed that 561,226 tons would be divertible, and that at least 50% (or 301,734 tons) of
17 construction waste would be diverted (in accordance with diversion requirements set forth by the
18 State Agency Model IWMA). This alternative is not expected to impact the lifespan of area landfills,
19 because over 70% of the remaining permitted capacity is associated with landfills with expected
20 lifespans of between 18 and 70 years—well beyond the expected timeframe for construction of
21 BDCP facilities, when solid waste disposal services would be needed. Further, implementation of
22 BMP 13 (Appendix 3B, *Environmental Commitments*) would require development of a project
23 specific construction debris recycling and diversion program to achieve a documented 50%
24 diversion of construction waste. Therefore, after consideration of diversion requirements, the
25 volume of construction debris that require disposal at landfills represents a negligible effect on the
26 remaining permitted capacity of Plan Area landfills, and is not expected to exceed this capacity.
27 Construction of Alternative 6A would not create solid waste in excess of the permitted capacity of
28 area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There
29 would be no adverse effect.

30 **CEQA Conclusion:** Based on the capacity of the landfills in the region, and the waste diversion
31 requirements set forth by the State of California, it would be expected that construction of the
32 proposed water conveyance facilities would not cause any exceedance of landfill capacity. This
33 alternative is not expected to impact the lifespan of area landfills, because over 70% of the
34 remaining permitted capacity is associated with landfills with expected lifespans of between 18 and
35 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste
36 disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B,
37 *Environmental Commitments*) would require development of a project specific construction debris
38 recycling and diversion program to achieve a documented 50% diversion of construction waste.
39 Construction of Alternative 6A would not create solid waste in excess of the permitted capacity of
40 area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities.
41 Therefore, there would be a less than significant impact on solid waste management facilities. No
42 mitigation is required.

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

3 **NEPA Effects:** Disruption of utilities and relocation of existing utility facilities under Alternative 6A
 4 would be similar to those described for Alternative 1A. Regional power transmission lines and one
 5 natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged
 6 and abandoned. Relocation of additional facilities near proposed forebays, RTM, and borrow or
 7 spoils areas may also be necessary. The potential damage and disruption to buried and overhead
 8 electrical transmission lines would be similar for telecommunications. Because relocation and
 9 disruption of existing utility infrastructure would be required under this alternative and would have
 10 the potential to create effects through the relocation of facilities, this alternative would result in an
 11 adverse effect on utilities.

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

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

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

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

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

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

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

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

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

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

36 **NEPA Effects:** Similar to Alternative 1A, the proposed water conveyance facilities under this
 37 alternative would be operated to provide diversions up to a total of 15,000 cfs from five new north
 38 Delta intakes. Potential effects associated with operation and maintenance of water conveyance
 39 facilities would be similar to those described under Alternative 1A. Therefore, Alternative 6A would

1 not result in physical impacts associated with the provision of new or physically altered government
2 facilities.

3 Because requirements for water and wastewater treatment under operations and maintenance of
4 the water conveyance facilities would be primarily associated with intakes and intake pumping
5 plant facilities, these effects are similar to those described under Alternative 1A. Operational
6 differences involving increased diversion quantities from north Delta intakes could require more
7 frequent maintenance activities under this alternative. However, quantities of water needed for
8 these purposes would still be anticipated to be relatively small compared with municipal supplies.
9 Additionally, water supplies and wastewater treatment services would potentially be provided by
10 non-municipal facilities.

11 Similar to Alternative 1A, the operation and maintenance activities associated with the proposed
12 water conveyance facilities are not expected to generate solid waste such that there would be an
13 increase in demand for solid waste management providers in the Plan Area and surrounding
14 communities.

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

21 Overall, operation and maintenance of the conveyance facilities under Alternative 6A would not
22 result in adverse effects on service demands, water capacity, wastewater and solid waste facilities or
23 conflict with local and regional utility lines because demand for law enforcement and fire protection
24 services would be temporary over a six-county area, new water and wastewater treatment service
25 would be handled onsite, and adequate solid waste disposal capacity exists to handle construction
26 waste. There would not be an adverse effect.

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

32 **Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the** 33 **Proposed CM2–CM11**

34 **NEPA Effects:** Potential effects associated with the need to construct new government facilities to
35 meet an increased need for public services resulting from the implementation of restoration
36 conservation components and measures designed to reduce the effect of species-level stressors
37 would be similar to those under Alternative 1A. Potential variation from Alternative 1A would be
38 anticipated to be minor but could result from the selection of different areas for restoration
39 activities based on the location of the physical water conveyance features associated with each
40 alternative. Because the location for the implementation of conservation activities is not known at
41 this point, it is not possible to determine whether the construction of conservation components
42 would require demolition and replacement of a government facility.

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

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

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

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

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

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

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

4 **CEQA Conclusion:** Implementation of the proposed conservation components would not likely
 5 require alteration or construction of new government facilities due to increased need for public
 6 services and utilities. Several measures to reduce stressors on covered species could result in water
 7 supply requirements, but are not expected to require substantial increases in demand on municipal
 8 water and wastewater treatment services. Construction and operation activities associated with the
 9 proposed conservation components would result in a less than significant impact on solid waste
 10 management facilities based upon the capacity of the landfills in the region, and the waste diversion
 11 requirements set forth by the State of California. Potential impacts of implementing conservation
 12 components on law enforcement, fire protection and emergency response services within the ROAs
 13 would be less than significant with the incorporation of environmental commitments into this
 14 alternative and would minimize construction-related accidents associated with hazardous materials
 15 spills, contamination, and fires that may result from construction of the conservation components.
 16 However, the location and construction and operational details (i.e., water consumption and water
 17 sources associated with conservation components) of these facilities and programs have not yet
 18 been developed. Therefore, the need for new or expanded water or wastewater treatment facilities
 19 and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-
 20 6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain
 21 whether this impact would be reduced to a less than significant level. Therefore, this would be a
 22 significant unavoidable impact.

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

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

25 **Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or** 26 **Minimizes Any Effect on Operational Reliability**

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

28 **Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or** 29 **Minimizes Any Effect on Worker and Public Health and Safety**

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

31 **20.3.3.12 Alternative 6B—Isolated Conveyance with East Alignment and** 32 **Intakes 1–5 (15,000 cfs; Operational Scenario D)**

33 **Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency** 34 **Response Services from New Workers in the Plan Area as a Result of Constructing the** 35 **Proposed Water Conveyance Facilities**

36 **NEPA Effects:** Effects related to the provision of law enforcement, fire protection, and emergency
 37 response services as a result of construction of the proposed water conveyance facilities would be
 38 similar to those described for Alternative 1B. Increased service demands would be experienced in
 39 the communities in which new construction workers relocate and in the areas in which construction
 40 would take place. The minor increase in construction workers relocating into the Plan Area for

1 specialized jobs during the construction period of approximately 9 years is not anticipated to result
 2 in a substantial increase in demand for law enforcement, fire protection and medical services
 3 because the estimated increase in demand would be spread across a large multi-county area and
 4 would not be expected to disproportionately affect any one jurisdiction. Accordingly, effects to fire
 5 protection, law enforcement and emergency response services from the increased demand of new
 6 workers in the Plan Area during construction of the proposed water conveyance facilities would not
 7 be considered adverse.

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

12 Incorporation of environmental commitments that would minimize construction-related accidents
 13 associated with hazardous materials spills, contamination, and fires would minimize potential
 14 effects related to the demand for law enforcement, fire protection, or emergency services (see
 15 Appendix 3B, *Environmental Commitments*). Construction of Alternative 6B would not increase the
 16 demand on law enforcement, fire protection, and emergency response services from new workers in
 17 the Plan Area such that it would result in the need for, new or physically altered governmental
 18 facilities. Impacts to emergency response times from construction traffic using emergency routes
 19 are discussed in Chapter 19 Impact Trans-3. Accordingly, there would be no adverse effect

20 **CEQA Conclusion:** The potential for impacts on law enforcement and fire services and facilities is
 21 not expected to be significant because the estimated increase in population in the Plan Area
 22 associated with construction of the alternative during peak construction would be distributed over
 23 multiple cities and counties within the Plan Area. In addition, environmental commitments would be
 24 incorporated into the alternative to reduce demand for law enforcement, fire protection, and
 25 emergency response services at or near construction sites from new construction workers in the
 26 Plan Area. Construction of Alternative 6B would not require new or physically altered governmental
 27 facilities to support the needs of new workers in the Plan Area. These impacts would be considered
 28 less than significant. No mitigation is required.

29 **Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the** 30 **Proposed Water Conveyance Facilities**

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

40 **CEQA Conclusion:** Depending on final design of the alignment, the alternative could require
 41 relocation of Courtland FPD's Hood Fire Station. While implementation of Mitigation Measure UT-2
 42 would lessen the severity of the impact by ensuring continuation of fire protection services in the
 43 Courtland FPD service area, construction of a replacement facility could cause significant
 44 environmental effects. Construction of a replacement fire station would require subsequent

1 environmental review under CEQA. If, however, coordination were successful, environmental
2 commitments and mitigation measures would be adopted by the Courtland Fire District and
3 Sacramento County and this impact could be less than significant.

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

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

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

9 **NEPA Effects:** Effects on public schools as a result of construction of the proposed water conveyance
10 facilities would be similar to those described for Alternative 1B. As under Alternative 1B, the
11 majority of construction jobs are expected to be filled by workers from the existing five-county labor
12 force. It is anticipated that there would be no increased demand for public school services from
13 these workers (see Table 20A-4, Appendix 20A). Although some workers who relocate from outside
14 of the Plan Area could have school-age children, resulting in an increase in public school enrollment,
15 these new students would likely be distributed through a number of schools within the Plan Area.
16 This minor increase in population in the Plan Area would not be expected to result in an increase in
17 enrollment numbers sufficient to exceed the capacity of any individual school or district, or to
18 warrant construction of a new facility within the Plan Area. There would not be an adverse effect.

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

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

28 **NEPA Effects:** Effects related to the need for expanded water or wastewater treatment facilities
29 would be similar to those described for Alternative 1B. While water needs are substantial, these
30 requirements would be temporary and could be met with non-municipal water sources without any
31 new water supply entitlements. Also similar to Alternative 1B, wastewater created as a result of
32 tunnel boring and concrete batching would be treated onsite at isolated RTM storage areas and
33 designated concrete batch plant sites, respectively. Construction of Alternative 6B would not require
34 or result in the construction of new water or wastewater treatment facilities or expansion of existing
35 facilities. This effect would not be adverse.

36 **CEQA Conclusion:** While construction of this alternative would require a substantial supply of
37 water, this supply could be met by non-municipal sources. Additional needs for wastewater
38 treatment and potable water could also be served by non-municipal entities. Construction of
39 Alternative 6B would not require or result in the construction of new water or wastewater
40 treatment facilities or expansion of existing facilities. This impact would be less than significant.
41 Mitigation is not required.

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

3 **NEPA Effects:** Potential effects associated with an increased demand for solid waste management
 4 providers in the Plan Area and surrounding communities as a result of waste generated from
 5 construction of the proposed water conveyance facilities would be similar to those described under
 6 Alternative 1B. Under Alternative 6B, the total volume of excavated material that would require
 7 disposal at a landfill during the construction period (58.25 tons) represents a negligible impact on
 8 the 11 solid waste landfills which have a total remaining permitted capacity of over 300 million tons.
 9 Of the estimated 376,449 tons of construction debris that would be generated under this alternative,
 10 it assumed that 350,097 tons would be divertible, and that at least 50% (or 188,225) of construction
 11 waste would be diverted (in accordance with diversion requirements set forth by the State Agency
 12 Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over
 13 70% of the remaining permitted capacity is associated with landfills with expected lifespans of
 14 between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities,
 15 when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix
 16 3B, *Environmental Commitments*) would require development of a project specific construction
 17 debris recycling and diversion program to achieve a documented 50% diversion of construction
 18 waste. Therefore, after consideration of diversion requirements, the volume of construction debris
 19 that require disposal at landfills represents a negligible effect on the remaining permitted capacity
 20 of Plan Area landfills, and is not expected to exceed this capacity. Construction of Alternative 6B
 21 would not create solid waste in excess of the permitted capacity of area landfills, nor would it
 22 adversely affect the expected lifespan of these solid waste facilities. There would be no adverse
 23 effect.

24 **CEQA Conclusion:** Based on the capacity of the landfills in the region, and the waste diversion
 25 requirements set forth by the State of California, it would be expected that construction of the
 26 proposed water conveyance facilities would not cause any exceedance of landfill capacity. This
 27 alternative is not expected to impact the lifespan of area landfills, because over 70% of the
 28 remaining permitted capacity is associated with landfills with expected lifespans of between 18 and
 29 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste
 30 disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B,
 31 *Environmental Commitments*) would require development of a project specific construction debris
 32 recycling and diversion program to achieve a documented 50% diversion of construction waste.
 33 Construction of Alternative 6B would not create solid waste in excess of the permitted capacity of
 34 area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities.
 35 Therefore, there would be a less than significant impact on solid waste management facilities. No
 36 mitigation is required.

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

39 **NEPA Effects:** The potential for disruption of utilities and relocation of existing utility facilities
 40 would be similar to that described under Alternative 1B. Regional power transmission lines and
 41 natural gas pipelines would require relocation. Additionally, inactive gas wells would need to be
 42 excavated and capped. The potential damage and disruption to buried and overhead electrical
 43 transmission lines would be similar for telecommunications infrastructure. Because relocation and
 44 disruption of existing utility infrastructure would be required under this alternative and would have

1 the potential to create effects through the relocation of facilities, this alternative would result in an
2 adverse effect on utilities.

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

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

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

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

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

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

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

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

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

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

27 **NEPA Effects:** Similar to Alternative 1B, the proposed water conveyance facilities under this
28 alternative would be operated to provide diversions up to a total of 15,000 cfs from the new north
29 Delta intakes. Under Alternative 6B, operation and maintenance of the proposed water conveyance
30 facilities would be similar to that described under Alternative 1B, and would not result in potential
31 effects associated with the need to construct new government facilities as a result of increased need
32 for public services.

33 Because requirements for water and wastewater treatment under operations and maintenance of
34 the water conveyance facilities would be primarily associated with intakes and intake pumping
35 plant facilities, these effects are similar to those described under Alternative 1B. Operational
36 differences involving increased diversion quantities from north Delta intakes could require more
37 frequent maintenance activities under this alternative. However, quantities of water needed for
38 these purposes would still be anticipated to be relatively small compared with municipal supplies.

1 Additionally, water supplies and wastewater treatment services would potentially be provided by
2 non-municipal facilities.

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

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

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

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

21 **Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the** 22 **Proposed CM2–CM11**

23 **NEPA Effects:** Potential effects associated with the need to construct new government facilities to
24 meet an increased need for public services resulting from the implementation of restoration
25 conservation components and measures designed to reduce the effect of species-level stressors
26 would be similar to those described under Alternative 1B. Potential variations from Alternative 1B
27 would be anticipated to be minor but could result from the selection of different areas for
28 restoration activities based on the location of the physical water conveyance features associated
29 with each alternative. Potential effects of implementing conservation components on law
30 enforcement, fire protection, and emergency response services within the ROAs would primarily
31 involve demand for services related to construction site security and construction-related accidents.
32 This effect would not be considered adverse with the implementation of environmental
33 commitments to provide onsite private security services at construction areas and implement
34 measures to minimize accidents and injuries, as described in Appendix 3B, *Environmental*
35 *Commitments*.

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

1 Effects on municipal water facilities from conservation components would be similar to Alternative
2 1B with potential variations arising from the selection of different locations for habitat restoration
3 or enhancement. Some activities associated with these measures could require municipal water and
4 wastewater treatment services; however, because the location and construction and operational
5 details (i.e., water consumption and water sources associated with conservation components) of
6 these facilities and programs have not yet been developed, the need for new or expanded water or
7 wastewater treatment facilities is uncertain and this effect would be considered adverse.

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

14 Conservation components including habitat restoration and enhancement would be similar to those
15 described under Alternative 1B. Potential variation would result from selection of different
16 restoration areas based on the physical footprint of water conveyance facilities. Like Alternative 1B,
17 however, the implementation of conservation components could result in utility service disruption
18 or possible damage to underground utilities. Similarly, the long-term conversion of existing utility
19 corridors to habitat purposes could require the relocation of utility infrastructure, which could carry
20 environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce
21 the severity of these effects.

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

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

36 The locations, construction, and operational details for these and other conservation components
37 have not been identified. Adverse effects due to the construction, operation and maintenance
38 activities associated with the conservation components are not expected to result in the need for
39 new government facilities to provide public services or the need for new or expanded water or
40 wastewater treatment facilities based on increased demand. Potential effects of implementing
41 conservation components on law enforcement, fire protection and emergency response services
42 within the ROAs would not be adverse with the incorporation of environmental commitments into
43 this alternative and would minimize construction-related accidents associated with hazardous
44 materials spills, contamination, and fires that may result from construction of the conservation

1 components. However, there is a potential for the disruption or relocation of utility infrastructure,
 2 which has the potential to result in an adverse effect. Further, no substantive adverse effects to solid
 3 waste management facilities are anticipated. Because the location and construction and operational
 4 details (i.e., water consumption and water sources associated with conservation components) of
 5 these facilities and programs have not yet been developed, the need for new or expanded water or
 6 wastewater treatment facilities is uncertain and this effect would be adverse.

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

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

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

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

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

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

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

34 **20.3.3.13 Alternative 6C—Isolated Conveyance with West Alignment and**
 35 **Intakes W1–W5 (15,000 cfs; Operational Scenario D)**

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

39 **NEPA Effects:** Effects related to the provision of law enforcement, fire protection, and emergency
 40 response services as a result of construction of the proposed water conveyance facilities would be

1 similar to those described for Alternative 1C. Increased service demands would be experienced in
2 the communities in which new construction workers relocate and in the areas in which construction
3 would take place.

4 As in Alternative 1C, the potential for Alternative 6C to result in an effect on law enforcement, fire
5 protection, and emergency response services because of increased demand from new workers in the
6 Plan Area during construction of the proposed water conveyance facilities is low. The minor
7 increase in population associated with specialized construction jobs in the Plan Area during the
8 construction period would not likely result in an increased demand for law enforcement, fire
9 protection and medical services because the minor increase in demand would be spread across a
10 large multi-county area and would not be expected to disproportionately affect any one jurisdiction.
11 The incorporation of environmental commitments that would minimize construction-related
12 accidents associated with hazardous materials spills, contamination, and fires, and provide for on-
13 site security at construction sites, would minimize potential effects related to demand for public
14 services associated with construction property protection and the potential for construction-related
15 accidents. Environmental commitments would be incorporated to reduce potential exposure of
16 hazardous materials to the human and natural environment, thereby minimizing the potential
17 related demand for fire or emergency services. Construction of Alternative 6C would not increase
18 the demand on law enforcement, fire protection, and emergency response services from new
19 workers in the Plan Area such that it would result in the need for, new or physically altered
20 governmental facilities. Impacts to emergency response times from construction traffic using
21 emergency routes are discussed in Chapter 19 Impact Trans-3. The effect would not be adverse.

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

30 In addition, incorporation of environmental commitments that would address construction-related
31 accidents associated with hazardous materials spills, contamination, and fires, and provide for
32 onsite security at construction sites, would minimize potential impacts related to increased demand
33 for public services associated with construction property protection and the potential for
34 construction-related accidents. Environmental commitments would also be incorporated to reduce
35 potential exposure of hazardous materials to the human and natural environment, thereby
36 minimizing the potential demand for fire or emergency services. Construction of Alternative 6C
37 would not require new or physically altered governmental facilities to support the needs of new
38 workers in the Plan Area. These impacts would be considered less than significant. No mitigation is
39 required.

40 **Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the** 41 **Proposed Water Conveyance Facilities**

42 **NEPA Effects:** As under Alternative 1C, construction of the proposed water conveyance facilities
43 under Alternative 6C would not conflict with a public facility, and therefore, would not require the
44 construction or major alteration of such facilities. This effect would not be adverse.

1 **CEQA Conclusion:** Construction of the proposed water conveyance facilities under Alternative 6C
2 would not require the construction or major alteration of such facilities. Therefore, this impact
3 would be less than significant. No mitigation is required.

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

6 **NEPA Effects:** Effects on public schools as a result of construction of the proposed water conveyance
7 facilities would be similar to those described for Alternative 1C. Because most of the new jobs are
8 expected to be filled by the existing five-county labor force, school-aged children of local
9 construction personnel are already served by existing schools and school districts (see Table 20A-4,
10 Appendix 20A). The incremental increase in school-age children of construction personnel moving
11 into the area for specialized jobs would likely be temporary and distributed through a number of
12 schools within the Plan Area. This increase would not be substantial enough to exceed the capacity
13 of any identified school or district, or to warrant construction of a new facility. There would not be
14 an adverse effect.

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

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

24 **NEPA Effects:** Effects related to the need for expanded water or wastewater treatment facilities
25 would be similar to those described for Alternative 1C. While water needs are substantial, these
26 requirements would be temporary and could be met with non-municipal water sources without any
27 new water supply entitlements. Construction of Alternative 6C would not require or result in the
28 construction of new water or wastewater treatment facilities or expansion of existing facilities. This
29 effect would not be adverse.

30 **CEQA Conclusion:** While construction of this alternative would require a substantial supply of
31 water, this supply could be met by non-municipal sources. Additional needs for wastewater
32 treatment and potable water could also be served by non-municipal entities. Construction of
33 Alternative 6C would not require or result in the construction of new water or wastewater
34 treatment facilities or expansion of existing facilities. This impact would be less than significant.
35 Mitigation is not required.

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

38 **NEPA Effects:** Potential effects associated with an increased demand for solid waste management
39 providers in the Plan Area and surrounding communities as a result of waste generated from
40 construction of the proposed water conveyance facilities would be similar to those described under
41 Alternative 1C. Overall, the construction waste that could be generated by implementing Alternative
42 6C would be similar to Alternative 1C, and would not adversely affect capacity of available landfills

1 because it represents a negligible amount of the total remaining permitted capacity of Plan Area
 2 landfills, and is not expected to exceed this capacity. Further, at least 50% of construction waste
 3 would be diverted (diversion requirements set forth by the State Agency Model IWMA). This
 4 alternative is not expected to impact the lifespan of area landfills, because over 70% of the
 5 remaining permitted capacity is associated with landfills with expected lifespans of between 18 and
 6 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste
 7 disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B,
 8 *Environmental Commitments*) would require development of a project specific construction debris
 9 recycling and diversion program to achieve a documented 50% diversion of construction waste.
 10 Construction of Alternative 6C would not create solid waste in excess of the permitted capacity of
 11 area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities. There
 12 would be no adverse effect.

13 **CEQA Conclusion:** Based on the capacity of the landfills in the region, and the waste diversion
 14 requirements set forth by the State of California, it would be expected that construction of the
 15 proposed water conveyance facilities would not cause any exceedance of landfill capacity. This
 16 alternative is not expected to impact the lifespan of area landfills, because over 70% of the
 17 remaining permitted capacity is associated with landfills with expected lifespans of between 18 and
 18 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste
 19 disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B,
 20 *Environmental Commitments*) would require development of a project specific construction debris
 21 recycling and diversion program to achieve a documented 50% diversion of construction waste.
 22 Construction of Alternative 6C would not create solid waste in excess of the permitted capacity of
 23 area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities.
 24 Therefore, there would be a less than significant impact on solid waste management facilities. No
 25 mitigation is required.

26 **Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed** 27 **Water Conveyance Facilities**

28 **NEPA Effects:** The potential for disruption of utilities and relocation of existing utility facilities
 29 would be similar to that described under Alternative 1C. Regional power transmission lines and one
 30 natural gas pipeline would require relocation. Additionally, active gas wells may need to be plugged
 31 and abandoned. Relocation of additional facilities near proposed forebays, RTM, and borrow or
 32 spoils areas may also be necessary. The potential damage and disruption to buried and overhead
 33 electrical transmission lines would be similar for telecommunications. Because relocation and
 34 disruption of existing utility infrastructure would be required under this alternative and would have
 35 the potential to create effects through the relocation of facilities, this alternative would result in an
 36 adverse effect on utilities.

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

41 **CEQA Conclusion:** Under this alternative, most features would avoid disrupting existing facilities by
 42 crossing over or under infrastructure. However, construction of facilities would conflict with
 43 existing utility facilities in some locations. Regional power transmission lines and one natural gas
 44 pipeline would require relocation. Additionally, active gas wells may need to be plugged and

1 abandoned. Because the relocation and potential disruption of utility infrastructure would be
2 required, this impact is significant and unavoidable.

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

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

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

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

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

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

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

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

17 **NEPA Effects:** Similar to Alternative 1C, the proposed water conveyance facilities under Alternative
18 6C would be operated to provide diversions up to a total of 15,000 cfs from the new north Delta
19 intakes. Potential effects associated with operation and maintenance of water conveyance facilities
20 would be similar to those described under Alternative 1C. Therefore, Alternative 6C would not result
21 in physical impacts associated with the provision of new or physically altered government facilities.

22 Because requirements for water and wastewater treatment under operations and maintenance of
23 the water conveyance facilities would be primarily associated with intakes and intake pumping
24 plant facilities, these effects are similar to those described under Alternative 1C. Operational
25 differences involving increased diversion quantities from north Delta intakes could require more
26 frequent maintenance activities under this alternative. However, quantities of water needed for
27 these purposes would still be anticipated to be relatively small compared with municipal supplies.
28 Additionally, water supplies and wastewater treatment services would potentially be provided by
29 non-municipal facilities.

30 Similar to Alternative 1C, the operation and maintenance activities associated with the proposed
31 water conveyance facilities are not expected to generate solid waste sufficient to create an increase
32 in demand for solid waste management providers in the Plan Area and surrounding communities.
33 Therefore, there would be no adverse effect to solid waste management facilities under Alternative
34 6C.

35 Operation and maintenance of water conveyance facilities under this alternative would not require
36 improvements to the existing physical power transmission system, as discussed under Impact UT-6.
37 As such, operation and maintenance activities associated with the proposed water conveyance
38 facilities would not be expected to result in the disruption or relocation of utilities. Effects

1 associated with energy demands of operation and maintenance of the proposed water conveyance
2 facilities are addressed in Chapter 21, *Energy*.

3 Overall, operation and maintenance of the conveyance facilities under Alternative 6C would not
4 result in adverse effects on public service demands, water supply and treatment capacity,
5 wastewater treatment facilities, solid waste facilities, or conflict with local and regional utility lines.
6 There would not be an adverse effect.

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

12 **Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the** 13 **Proposed CM2–CM11**

14 **NEPA Effects:** Potential effects associated with the need to construct new government facilities as a
15 result of increased need for public services due to the implementation of restoration conservation
16 components and those measures designed to reduce the effect of species-level stressors would be
17 similar to those described under Alternative 1C. Potential variation from Alternative 1C would be
18 anticipated to be minor but could result from the selection of different areas for restoration
19 activities based on the location of the physical water conveyance features associated with each
20 alternative. Because the location for the implementation of conservation activities is not known at
21 this point, it is not possible to determine whether the construction of conservation components
22 would require demolition and replacement of a government facility.

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

33 Effects on municipal water facilities from conservation components would be similar to Alternative
34 1C with potential variations arising from the selection of different locations for habitat restoration
35 or enhancement. Some activities associated with these measures could require municipal water and
36 wastewater treatment services; however, because the location and construction and operational
37 details (i.e., water consumption and water sources associated with conservation components) for
38 these facilities and programs have not yet been developed, the need for new or expanded water or
39 wastewater treatment facilities is uncertain.

40 Potential effects associated with an increase in demand for solid waste management providers in
41 the Plan Area and surrounding communities from solid waste generated by construction and
42 operation of the proposed conservation components would be similar to those described under
43 Alternative 1C. Based upon the capacity of the landfills in the region, and the waste diversion

1 requirements set forth by the State of California, it is expected that the implementing the proposed
2 conservation components would not cause any exceedance of landfill capacity.

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

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

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

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

40 **CEQA Conclusion:** Implementation of the proposed conservation components would not likely
41 require alteration or construction of new government facilities due to an increased demand for
42 public services and utilities. Several measures to reduce stressors on covered species could result in
43 water supply requirements, but are not expected to require substantial increases in demand for city
44 or county water and wastewater treatment services. Construction and operation activities

1 associated with the proposed conservation components would result in a less than significant
 2 impact on solid waste management facilities based on the capacity of the landfills in the region and
 3 the waste diversion requirements set forth by the State of California. Potential impacts of
 4 implementing conservation components on law enforcement, fire protection and emergency
 5 response services within the ROAs would be less than significant with the incorporation of
 6 environmental commitments into this alternative and would minimize construction-related
 7 accidents associated with hazardous materials spills, contamination, and fires that may result from
 8 construction of the conservation components. However, the location and construction or
 9 operational details (i.e., water consumption and water sources associated with conservation
 10 components) for these facilities and programs have not been developed. Therefore, the need for new
 11 or expanded water or wastewater treatment facilities and the potential to disrupt utilities in the
 12 study area is unknown. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce the significance
 13 of impacts on utilities; however, it remains uncertain whether this impact would be reduced to a less
 14 than significant level. Therefore, this would be a significant unavoidable impact.

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

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

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

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

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

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

23 **20.3.3.14 Alternative 7—Dual Conveyance with Pipeline/Tunnel, Intakes 2,**
 24 **3, and 5, and Enhanced Aquatic Conservation (9,000 cfs;**
 25 **Operational Scenario E)**

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

29 *NEPA Effects:* Effects related to the provision of law enforcement, fire protection, and emergency
 30 response services as a result of construction of the proposed water conveyance facilities would be
 31 similar to those described for Alternative 1A. Increased service demands would be experienced in
 32 the communities in which new construction workers relocate and in the areas in which construction
 33 would take place. However, effects on services from the presence of new workers in the Plan Area
 34 would be anticipated to be somewhat less than for Alternative 1A because this alternative would
 35 involve constructing three intake facilities rather than five.

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

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

4 Incorporation of environmental commitments that would minimize construction-related accidents
5 associated with hazardous materials spills, contamination, and fires would minimize potential
6 effects related to the demand for law enforcement, fire protection, or emergency services (see
7 Appendix 3B, *Environmental Commitments*). Construction of Alternative 2B would not increase the
8 demand on law enforcement, fire protection, and emergency response services from new workers in
9 the Plan Area such that it would result in the need for, new or physically altered governmental
10 facilities. Impacts to emergency response times from construction traffic using emergency routes
11 are discussed in Chapter 19 Impact Trans-3. Accordingly, there would be no adverse effect.

12 **CEQA Conclusion:** The potential for impacts on law enforcement and fire services and facilities is
13 not expected to be significant because the estimated increase in population in the Plan Area
14 associated with construction of the alternative during peak construction would be distributed over
15 multiple cities and counties within the Plan Area. In addition, environmental commitments would be
16 incorporated into the alternative to reduce demand for law enforcement, fire protection, and
17 emergency response services at or near construction sites from new construction workers in the
18 Plan Area, and effects on local law enforcement agencies associated with construction property
19 protection. Construction of Alternative 7 would not require new or physically altered governmental
20 facilities to support the needs of new workers in the Plan Area. These impacts would be considered
21 less than significant. No mitigation is required.

22 **Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the** 23 **Proposed Water Conveyance Facilities**

24 **NEPA Effects:** Construction of Alternative 7 would have the same potential conflict with the
25 Courtland FPD's Hood Fire Station as under Alternative 1A, possibly requiring replacement of the
26 facility (Figure 20-5). Mitigation Measure UT-2 would be available to lessen the severity of the
27 potential effect to not adverse by ensuring continuation of fire protection services in the Courtland
28 Fire Protection District service area, by the Courtland Fire Station which also serves the area.
29 Implementation of Mitigation Measure UT-2 would also require the construction of a replacement
30 facility, which could result in adverse environmental effects. Therefore, this effect would be adverse.
31 If, however, coordination were successful, environmental commitments and mitigation measures
32 would be adopted by the Courtland Fire District and Sacramento County and effects would not be
33 adverse.

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

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

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

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

6 **NEPA Effects:** Effects on public schools as a result of construction of the proposed water conveyance
 7 facilities would be similar to those described for Alternative 1A. However, the population increase
 8 associated with construction of the proposed water conveyance facilities during peak construction
 9 would be less because Alternative 7 would involve construction of three intake facilities rather than
 10 five. The minor increase in school-age children of construction personnel moving into the area for
 11 specialized jobs (e.g., tunnel construction) would likely be distributed through a number of schools
 12 within the Plan Area. This increase would not be substantial enough to exceed the capacity of any
 13 identified school or district, or to warrant construction of a new facility. There would not be an
 14 adverse effect.

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

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

24 **NEPA Effects:** Effects related to the need for expanded water or wastewater treatment facilities
 25 would be similar to those for Alternative 4. Under this alternative, however, concrete batch plants
 26 would require a smaller quantity of water for concrete production because only three intake
 27 facilities (and associated conveyance pipelines and other structures) would be constructed. While
 28 water supply needs would still be substantial, these requirements would be temporary and could be
 29 met with non-municipal water sources without any new water supply entitlements. Based on the
 30 number of major structures associated with this alternative, it is estimated that 14 field offices
 31 would be needed, which would use 18 million gallons of water. In addition, 140 million gallons of
 32 water would be used for activities associated with concrete batch plants. The total potable water
 33 supply needed under this alternative is estimated to be 158.4 million gallons (Table 20-3). While
 34 water supply needs would still be substantial, these requirements would be temporary and could be
 35 met with non-municipal water sources without any new water supply entitlements. Also similar to
 36 Alternative 4, wastewater created as a result of tunnel boring and concrete batching would be
 37 treated onsite at isolated RTM storage areas and designated concrete batch plant sites, respectively.
 38 Construction of Alternative 7 would not require or result in the construction of new water or
 39 wastewater treatment facilities or expansion of existing facilities. This effect would not be adverse.

40 **CEQA Conclusion:** While construction of this alternative would require a substantial supply of
 41 water, this supply could be met by non-municipal sources. Additional needs for wastewater
 42 treatment and potable water could also be served by non-municipal entities. Construction of
 43 Alternative 7 would not require or result in the construction of new water or wastewater treatment

1 facilities or expansion of existing facilities. This impact would be less than significant. Mitigation is
2 not required.

3 **Impact UT-5: Effects on Landfills as a Result of Solid Waste Disposal Needs during** 4 **Construction of the Proposed Water Conveyance Facilities**

5 **NEPA Effects:** Potential effects associated with an increased demand for solid waste management
6 providers in the Plan Area and surrounding communities as a result of waste generated from
7 construction of the proposed water conveyance facilities would be similar to those described under
8 Alternative 1A. However, there would be less solid waste generated as a result of construction
9 because Alternative 7 would only require construction of three intake facilities. Overall, the
10 construction waste that could be generated by implementing Alternative 7 would not adversely
11 affect capacity of available landfills because it represents a negligible amount of the total remaining
12 permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. Further, at least
13 50% of construction waste would be diverted (diversion requirements set forth by the State Agency
14 Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over
15 70% of the remaining permitted capacity is associated with landfills with expected lifespans of
16 between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities,
17 when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix
18 3B, *Environmental Commitments*) would require development of a project specific construction
19 debris recycling and diversion program to achieve a documented 50% diversion of construction
20 waste. Construction of Alternative 7 would not create solid waste in excess of the permitted capacity
21 of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities.
22 There would be no adverse effect.

23 **CEQA Conclusion:** Based on the capacity of the landfills in the region, and the waste diversion
24 requirements set forth by the State of California, it would be expected that construction of the
25 proposed water conveyance facilities would not cause any exceedance of landfill capacity. This
26 alternative is not expected to impact the lifespan of area landfills, because over 70% of the
27 remaining permitted capacity is associated with landfills with expected lifespans of between 18 and
28 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste
29 disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B,
30 *Environmental Commitments*) would require development of a project specific construction debris
31 recycling and diversion program to achieve a documented 50% diversion of construction waste.
32 Construction of Alternative 7 would not create solid waste in excess of the permitted capacity of
33 area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities.
34 Therefore, there would be a less than significant impact on solid waste management facilities. No
35 mitigation is required.

36 **Impact UT-6: Effects on Regional or Local Utilities as a Result of Constructing the Proposed** 37 **Water Conveyance Facilities**

38 **NEPA Effects:** Disruption of utilities and relocation of existing utility facilities under Alternative 7
39 would be similar to those described for Alternative 1A. Because Alternative 7 would only construct
40 Intakes 2, 3, and 5, implementing it would avoid potential conflicts associated with Intakes 1 and 4.
41 Regional power transmission lines and one natural gas pipeline would require relocation.
42 Additionally, active gas wells may need to be plugged and abandoned. Relocation of additional
43 facilities near proposed forebays, RTM, and borrow or spoils areas may also be necessary. The
44 potential damage and disruption to buried and overhead electrical transmission lines would be

1 similar for telecommunications. Because relocation and disruption of existing utility infrastructure
 2 would be required under this alternative and would have the potential to create effects through the
 3 relocation of facilities, this alternative would result in an adverse effect on utilities.

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

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

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

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

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

20 **Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or** 21 **Minimizes Any Effect on Operational Reliability**

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

23 **Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or** 24 **Minimizes Any Effect on Worker and Public Health and Safety**

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

26 **Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance** 27 **of the Proposed Water Conveyance Facilities**

28 **NEPA Effects:** The proposed water conveyance facilities under this alternative would be operated to
 29 provide diversions up to a total of 9,000 cfs from three new north Delta intakes, rather than 15,000
 30 cfs from five intakes under Alternative 1A. However, potential effects associated with operation and
 31 maintenance of water conveyance facilities would be similar to those described under Alternative
 32 1A. Therefore, Alternative 7 would not result in physical impacts associated with the provision of
 33 new or physically altered government facilities.

34 Because requirements for water and wastewater treatment under operations and maintenance of
 35 the water conveyance facilities would be primarily associated with intakes and intake pumping
 36 plant facilities, these effects would be similar to but smaller than those described under Alternative
 37 1A because this alternative would build three intake facilities rather than five. Quantities of water
 38 needed for these purposes would be anticipated to be relatively small compared with municipal

1 supplies. Additionally, water supplies and wastewater treatment services would potentially be
2 provided by non-municipal facilities.

3 Similar to Alternative 1A, the operation and maintenance activities associated with the proposed
4 water conveyance facilities are not expected to generate solid waste such that there would be an
5 increase in demand for solid waste management providers in the Plan Area and surrounding
6 communities. Because Alternative 7 includes only three intakes and not five as under Alternative 1A,
7 the volume of solids generated from the sediment load within the river would be less than the
8 estimated volume under Alternative 1A.

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

15 Overall, operation and maintenance of the conveyance facilities under Alternative 7 would not result
16 in adverse effects on service demands, water capacity, wastewater and solid waste facilities or
17 conflict with local and regional utility lines because demand for law enforcement and fire protection
18 services would be temporary over a six-county area, new water and wastewater treatment service
19 would be handled onsite, and adequate solid waste disposal capacity exists to handle construction
20 waste. There would not be an adverse effect.

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

26 **Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the** 27 **Proposed CM2–CM11**

28 **NEPA Effects:** Potential effects associated with the need to construct new government facilities to
29 meet an increased need for public services resulting from the implementation of restoration
30 conservation components and those measures designed to reduce the effect of species-level
31 stressors would be similar to those under Alternative 1A. Potential variation from Alternative 1A
32 would be anticipated to be minor but could result from the selection of different areas for
33 restoration activities based on the location of the physical water conveyance features associated
34 with each alternative. Because the location for the implementation of conservation activities is not
35 known at this point, it is not possible to determine whether the construction of conservation
36 components would require demolition and replacement of a government facility.

37 Effects on municipal water facilities from conservation components would be similar to those for
38 Alternative 1A. Service demands related to channel margin habitat enhancement areas and
39 seasonally-inundated floodplain restoration areas would be greater, based on respective targets of
40 40 miles and 20,000 acres for these measures under this alternative, compared with 20 miles and
41 10,000 acres for Alternative 1A. Some activities associated with these measures could require
42 municipal water and wastewater treatment services; however, because the location and
43 construction and operational details (i.e., water consumption and water sources associated with

1 conservation components) of these facilities and programs have not yet been developed, the need
2 for new or expanded water or wastewater treatment facilities is uncertain.

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

9 Conservation components including habitat restoration and enhancement would be similar to those
10 described under Alternative 1A; however, under this alternative, 40 miles of channel margin habitat
11 would be enhanced and 20,000 acres of seasonally inundated floodplain would be restored, rather
12 than 20 miles and 10,000 acres, respectively, under Alternative 1A. The implementation of
13 conservation components could result in utility service disruption or possible damage to
14 underground utilities. Similarly, the long-term conversion of existing utility corridors to habitat
15 purposes could require the relocation of utility infrastructure, which could carry environmental
16 effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of
17 these effects.

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

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

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

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

3 **CEQA Conclusion:** Implementation of the proposed conservation components would not likely
4 require alteration or construction of new government facilities due to increased need for public
5 services and utilities. Several measures to reduce stressors on covered species could result in water
6 supply requirements, but are not expected to require substantial increases in demand on municipal
7 water and wastewater treatment services. Construction and operation activities associated with the
8 proposed conservation components would result in a less than significant impact on solid waste
9 management facilities based upon the capacity of the landfills in the region, and the waste diversion
10 requirements set forth by the State of California. Potential impacts of implementing conservation
11 components on law enforcement, fire protection and emergency response services within the ROAs
12 would be less than significant with the incorporation of environmental commitments into this
13 alternative and would minimize construction-related accidents associated with hazardous materials
14 spills, contamination, and fires that may result from construction of the conservation components.
15 However, the location and construction and operational details (i.e., water consumption and water
16 sources associated with conservation components) of these facilities and programs have not yet
17 been developed. Therefore, the need for new or expanded water or wastewater treatment facilities
18 and the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-
19 6b, and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain
20 whether this impact would be reduced to a less than significant level. Therefore, this would be a
21 significant unavoidable impact.

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

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

24 **Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or** 25 **Minimizes Any Effect on Operational Reliability**

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

27 **Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or** 28 **Minimizes Any Effect on Worker and Public Health and Safety**

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

30 **20.3.3.15 Alternative 8—Dual Conveyance with Pipeline/Tunnel, Intakes 2,** 31 **3, and 5, and Increased Delta Outflow (9,000 cfs; Operational** 32 **Scenario F)**

33 **Impact UT-1: Increased Demand on Law Enforcement, Fire Protection, and Emergency** 34 **Response Services from New Workers in the Plan Area as a Result of Constructing the** 35 **Proposed Water Conveyance Facilities**

36 **NEPA Effects:** Effects related to the provision of law enforcement, fire protection, and emergency
37 response services as a result of construction of the proposed water conveyance facilities would be
38 similar to those described for Alternative 1A. Increased service demands would be experienced in
39 the communities in which new construction workers relocate and in the areas in which construction
40 would take place. However, effects on services from the presence of new workers in the Plan Area

1 would be anticipated to be somewhat less than for Alternative 1A because this alternative would
2 involve three intake facilities rather than five.

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

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

11 Incorporation of environmental commitments that would minimize construction-related accidents
12 associated with hazardous materials spills, contamination, and fires would minimize potential
13 effects related to the demand for law enforcement, fire protection, or emergency services (see
14 Appendix 3B, *Environmental Commitments*). Construction of Alternative 8 would not increase the
15 demand on law enforcement, fire protection, and emergency response services from new workers in
16 the Plan Area such that it would result in the need for, new or physically altered governmental
17 facilities. Impacts to emergency response times from construction traffic using emergency routes
18 are discussed in Chapter 19 Impact Trans-3. Accordingly, there would be no adverse effect.

19 **CEQA Conclusion:** The potential for impacts on law enforcement and fire services and facilities is
20 not expected to be significant because the estimated increase in population in the Plan Area
21 associated with construction of the alternative during peak construction would be distributed over
22 multiple cities and counties within the Plan Area. In addition, environmental commitments would be
23 incorporated into the alternative to reduce demand for law enforcement, fire protection, and
24 emergency response services at or near construction sites from new construction workers in the
25 Plan Area, and effects on local law enforcement agencies associated with construction property
26 protection. Construction of Alternative 8 would not require new or physically altered governmental
27 facilities to support the needs of new workers in the Plan Area. These impacts would be considered
28 less than significant. No mitigation is required.

29 **Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the** 30 **Proposed Water Conveyance Facilities**

31 **NEPA Effects:** Construction of Alternative 8 would have the same potential conflict with the
32 Courtland FPD's Hood Fire Station as under Alternative 1A, possibly requiring replacement of the
33 facility (Figure 20-5). Mitigation Measure UT-2 would be available to lessen the severity of the
34 potential effect to not adverse by ensuring continuation of fire protection services in the Courtland
35 Fire Protection District service area, by the Courtland Fire Station which also serves the area.
36 Implementation of Mitigation Measure UT-2 would also require the construction of a replacement
37 facility, which could result in adverse environmental effects. Therefore, this effect would be adverse.
38 If, however, coordination were successful, environmental commitments and mitigation measures
39 would be adopted by the Courtland Fire District and Sacramento County and effects would not be
40 adverse.

41 **CEQA Conclusion:** Depending on final design of the alignment, the alternative could require
42 relocation of Courtland FPD's Hood Fire Station. While implementation of Mitigation Measure UT-2
43 would lessen the severity of the impact by ensuring continuation of fire protection services in the

1 Courtland FPD service area, construction of a replacement facility could cause significant
 2 environmental effects. Construction of a replacement fire station would require subsequent
 3 environmental review under CEQA. If, however, coordination were successful, environmental
 4 commitments and mitigation measures would be adopted by the Courtland Fire District and
 5 Sacramento County and this impact could be less than significant.

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

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

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

11 **NEPA Effects:** Effects on public schools as a result of construction of the proposed water conveyance
 12 facilities would be similar to those described for Alternative 1A. However, the population increase
 13 associated with construction of the proposed water conveyance facilities during peak construction
 14 would be less because Alternative 8 would involve construction of three intake facilities rather than
 15 five. The minor increase in school-age children of construction personnel moving into the area for
 16 specialized jobs (e.g., tunnel construction) would likely be distributed through a number of schools
 17 within the Plan Area. This increase would not be substantial enough to exceed the capacity of any
 18 identified school or district, or to warrant construction of a new facility. There would not be an
 19 adverse effect.

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

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

29 **NEPA Effects:** Effects related to the need for expanded water or wastewater treatment facilities
 30 would be similar to those for Alternative 4. Under this alternative, however, concrete batch plants
 31 would require a smaller quantity of water for concrete production because only three intake
 32 facilities (along with associated conveyance pipelines and other structures) would be constructed.
 33 Based on the number of major structures associated with this alternative, it is estimated that 14 field
 34 offices would be needed, which would use 18 million gallons of water. In addition, 140 million
 35 gallons of water would be used for activities associated with concrete batch plants. The total potable
 36 water supply needed under this alternative is estimated to be 158.4 million gallons (Table 20-3).
 37 While water supply needs would still be substantial, these requirements would be temporary and
 38 could be met with non-municipal water sources without any new water supply entitlements. Also
 39 similar to Alternative 4, wastewater created as a result of tunnel boring and concrete batching
 40 would be treated onsite at isolated RTM storage areas and designated concrete batch plant sites,
 41 respectively. Construction of Alternative 8 would not require or result in the construction of new

1 water or wastewater treatment facilities or expansion of existing facilities. This effect would not be
2 adverse.

3 **CEQA Conclusion:** While construction of this alternative would require a substantial supply of
4 water, this supply could be met by non-municipal sources. Additional needs for wastewater
5 treatment and potable water could also be served by non-municipal entities. Construction of
6 Alternative 8 would not require or result in the construction of new water or wastewater treatment
7 facilities or expansion of existing facilities. This impact would be less than significant. Mitigation is
8 not required.

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

11 **NEPA Effects:** Potential effects associated with an increased demand for solid waste management
12 providers in the Plan Area and surrounding communities as a result of waste generated from
13 construction of the proposed water conveyance facilities would be similar to those described under
14 Alternative 1A. However, there would be less solid waste generated as a result of construction
15 because Alternative 8 would only require construction of three intake facilities. Overall, the
16 construction waste that could be generated by implementing Alternative 8 would not adversely
17 affect capacity of available landfills because it represents a negligible amount of the total remaining
18 permitted capacity of Plan Area landfills, and is not expected to exceed this capacity. Further, at least
19 50% of construction waste would be diverted (diversion requirements set forth by the State Agency
20 Model IWMA). This alternative is not expected to impact the lifespan of area landfills, because over
21 70% of the remaining permitted capacity is associated with landfills with expected lifespans of
22 between 18 and 70 years—well beyond the expected timeframe for construction of BDCP facilities,
23 when solid waste disposal services would be needed. Further, implementation of BMP 13 (Appendix
24 3B, *Environmental Commitments*) would require development of a project specific construction
25 debris recycling and diversion program to achieve a documented 50% diversion of construction
26 waste. Construction of Alternative 8 would not create solid waste in excess of the permitted capacity
27 of area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities.
28 There would be no adverse effect.

29 **CEQA Conclusion:** Based on the capacity of the landfills in the region, and the waste diversion
30 requirements set forth by the State of California, it would be expected that construction of the
31 proposed water conveyance facilities would not cause any exceedance of landfill capacity. This
32 alternative is not expected to impact the lifespan of area landfills, because over 70% of the
33 remaining permitted capacity is associated with landfills with expected lifespans of between 18 and
34 70 years—well beyond the expected timeframe for construction of BDCP facilities, when solid waste
35 disposal services would be needed. Further, implementation of BMP 13 (Appendix 3B,
36 *Environmental Commitments*) would require development of a project specific construction debris
37 recycling and diversion program to achieve a documented 50% diversion of construction waste.
38 Construction of Alternative 8 would not create solid waste in excess of the permitted capacity of
39 area landfills, nor would it adversely affect the expected lifespan of these solid waste facilities.
40 Therefore, there would be a less than significant impact on solid waste management facilities. No
41 mitigation is required.

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

3 **NEPA Effects:** Disruption of utilities and relocation of existing utility facilities under Alternative 8
 4 would be similar to those described for Alternative 1A. Because Alternative 8 would only construct
 5 Intakes 2, 3, and 5, implementing it would avoid potential conflicts associated with Intakes 1 and 4.
 6 Regional power transmission lines and one natural gas pipeline would require relocation.
 7 Additionally, active gas wells may need to be plugged and abandoned. Relocation of additional
 8 facilities near proposed forebays, RTM, and borrow or spoils areas may also be necessary. The
 9 potential damage and disruption to buried and overhead electrical transmission lines would be
 10 similar for telecommunications. Because relocation and disruption of existing utility infrastructure
 11 would be required under this alternative and would have the potential to create effects through the
 12 relocation of facilities, this alternative would result in an adverse effect on utilities.

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

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

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

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

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

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

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

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

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

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

37 **NEPA Effects:** The proposed water conveyance facilities under this alternative would be operated to
 38 provide diversions up to a total of 9,000 cfs from three new north Delta intakes, rather than 15,000
 39 cfs from five intakes under Alternative 1A. However, potential effects associated with operation and

1 maintenance of water conveyance facilities would be similar to those described under Alternative
2 1A. Therefore, Alternative 8 would not result in physical impacts associated with the provision of
3 new or physically altered government facilities.

4 Because requirements for water and wastewater treatment under operations and maintenance of
5 the water conveyance facilities would be primarily associated with intakes and intake pumping
6 plant facilities, these effects would be similar to but smaller than those described under Alternative
7 1A because this alternative would build three intake facilities rather than five. Quantities of water
8 needed for these purposes would be anticipated to be relatively small compared with municipal
9 supplies. Additionally, water supplies and wastewater treatment services would potentially be
10 provided by non-municipal facilities.

11 Similar to Alternative 1A, the operation and maintenance activities associated with the proposed
12 water conveyance facilities are not expected to generate solid waste sufficient to increase demand
13 for solid waste management providers in the Plan Area and surrounding communities. Because
14 Alternative 8 includes only three intakes and not five as under Alternative 1A, the volume of solids
15 generated from the sediment load within the river would be less than the estimated volume under
16 Alternative 1A.

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

23 Overall, operation and maintenance of the conveyance facilities under Alternative 8 would not result
24 in adverse effects on service demands, water capacity, wastewater and solid waste facilities or
25 conflict with local and regional utility lines because demand for law enforcement and fire protection
26 services would be temporary over a six-county area, new water and wastewater treatment service
27 would be handled onsite, and adequate solid waste disposal capacity exists to handle construction
28 waste. There would not be an adverse effect.

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

34 **Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the** 35 **Proposed CM2-CM11**

36 **NEPA Effects:** Potential effects associated with the need to construct new government to meet an
37 increased need for public services resulting from the implementation of restoration conservation
38 components and those measures designed to reduce the effect of species-level stressors would be
39 similar to those described under Alternative 1A. Potential variation from Alternative 1A would be
40 anticipated to be minor but could result from the selection of different areas for restoration
41 activities based on the location of the physical water conveyance features associated with each
42 alternative. Because the location for the implementation of conservation activities is not known at

1 this point, it is not possible to determine whether the construction of conservation components
2 would require demolition and replacement of a government facility.

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

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

15 Conservation components including habitat restoration and enhancement would be similar to those
16 described under Alternative 1A. The implementation of conservation components could result in
17 utility service disruption or possible damage to underground utilities. Similarly, the long-term
18 conversion of existing utility corridors to habitat purposes could require the relocation of utility
19 infrastructure, which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-
20 6c would be available to reduce the severity of these effects.

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

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

35 The locations, construction, and operational details for these and other conservation components
36 have not been identified. Adverse effects due to the construction, operation and maintenance
37 activities associated with the conservation components are not expected to result in the need for
38 new government facilities to provide public services or the need for new or expanded water or
39 wastewater treatment facilities based on increased demand. Potential effects of implementing
40 conservation components on law enforcement, fire protection and emergency response services
41 within the ROAs would not be adverse with the incorporation of environmental commitments into
42 this alternative and would minimize construction-related accidents associated with hazardous
43 materials spills, contamination, and fires that may result from construction of the conservation
44 components. However, there is a potential for the disruption or relocation of utility infrastructure,

1 which has the potential to result in an adverse effect. Further, no substantive adverse effects to solid
 2 waste management facilities are anticipated. Because the location and construction and operational
 3 details (i.e., water consumption and water sources associated with conservation components)
 4 related to these facilities and programs have not yet been developed, the need for new or expanded
 5 water or wastewater treatment facilities is uncertain and this effect would be adverse.

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

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

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

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

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

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

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

34 **20.3.3.16 Alternative 9—Through Delta/Separate Corridors (15,000 cfs;**
 35 **Operational Scenario G)**

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

39 **NEPA Effects:** Effects related to the provision of law enforcement, fire protection, and emergency
 40 response services as a result of construction of the proposed water conveyance facilities would be

1 similar to those described for Alternative 1A. However, the estimated number construction workers
2 under Alternative 9 is less than under Alternative 1A because it involves construction of fewer
3 structural features. Alternative 9 would require approximately 3,210 workers, most of whom are
4 expected to come from the existing five-county labor force. As such, effects on services from the
5 presence of any new workers that may move into the region for specialized jobs in the Plan Area
6 would be even less than under Alternative 1A.

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

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

15 Incorporation of environmental commitments that would minimize construction-related accidents
16 associated with hazardous materials spills, contamination, and fires would minimize potential
17 effects related to the demand for law enforcement, fire protection, or emergency services (see
18 Appendix 3B, *Environmental Commitments*). Construction of Alternative 9 would not increase the
19 demand on law enforcement, fire protection, and emergency response services from new workers in
20 the Plan Area such that it would result in the need for, new or physically altered governmental
21 facilities. Impacts to emergency response times from construction traffic using emergency routes
22 are discussed in Chapter 19 Impact Trans-3. Accordingly, there would be no adverse effect.

23 **CEQA Conclusion:** The potential for impacts on law enforcement and fire services and facilities is
24 not expected to be significant because the estimated increase in population in the Plan Area
25 associated with construction of the alternative during peak construction would be distributed over
26 multiple cities and counties within the Plan Area. In addition, environmental commitments would be
27 incorporated into the alternative to reduce demand for law enforcement, fire protection, and
28 emergency response services at or near construction sites from new construction workers in the
29 Plan Area, and effects on local law enforcement agencies associated with construction property
30 protection. Construction of Alternative 9 would not require new or physically altered governmental
31 facilities to support the needs of new workers in the Plan Area. These impacts would be considered
32 less than significant. No mitigation is required.

33 **Impact UT-2: Displacement of Public Service Facilities as a Result of Constructing the** 34 **Proposed Water Conveyance Facilities**

35 **NEPA Effects:** Under Alternative 9, construction of the proposed water conveyance facilities would
36 not conflict with a public facility, and therefore, would not require the construction or major
37 alteration of such facilities. This effect would not be adverse.

38 **CEQA Conclusion:** Construction of the proposed water conveyance facilities under Alternative 9
39 would not require the construction or major alteration of such facilities. Therefore, this impact
40 would be less than significant. No mitigation is required.

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

3 **NEPA Effects:** Effects on public schools as a result of construction of the proposed water conveyance
 4 facilities would be similar to those described for Alternative 1A. However, the population increase
 5 associated with construction of the proposed water conveyance facilities during peak construction
 6 would be less because Alternative 9 would involve construction of fewer structural features.
 7 Construction under Alternative 9 would require an estimated 3,210 workers within the Plan Area
 8 during peak construction (Table 20-2). Since most of the new jobs are expected to be filled by the
 9 existing five-county labor force, school-aged children of local construction personnel are already
 10 served by existing schools and school districts (see Table 20A-4, Appendix 20A). The incremental
 11 increase in school-age children of construction personnel moving into the area for specialized jobs
 12 would likely be temporary and distributed through a number of schools within the Plan Area. This
 13 increase would not be substantial enough to exceed the capacity of any identified school or district,
 14 or to warrant construction of a new facility. There would not be an adverse effect.

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

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

24 **NEPA Effects:** The mechanisms for potential effects related to the need for expanded water or
 25 wastewater treatment facilities would be similar to those described for Alternative 1A. Although the
 26 water conveyance facilities constructed under Alternative 9 would not require tunneling, the
 27 amount of concrete needed for the construction of this alternative is estimated to be 1.4 million
 28 cubic yards of concrete (as opposed to 1.5 million cubic yards under Alternative 1A). However,
 29 concrete production would still be required for the construction of intakes, pumping plants,
 30 barriers, siphons, and bridges. It is estimated that 42 million gallons of water would be used for
 31 activities associated with the three concrete batch plants. In addition, based on the number of major
 32 structures associated with this alternative, it is estimated that 10 field offices would be needed,
 33 which would use 13 million gallons of water. The total potable water supply needed under this
 34 alternative is estimated to be 55.2 million gallons (Table 20-3).

35 While water needs under Alternative 9 would still be substantial, these requirements would be
 36 temporary and could be met with non-municipal water sources without any new water supply
 37 entitlements. Also similar to Alternative 1A, wastewater created as a result of tunnel boring and
 38 concrete batching would be treated onsite at isolated RTM storage areas and designated concrete
 39 batch plant sites, respectively. Construction of Alternative 9 would not require or result in the
 40 construction of new water or wastewater treatment facilities or expansion of existing facilities. This
 41 effect would not be adverse.

42 **CEQA Conclusion:** While construction of this alternative would require a substantial supply of
 43 water, this supply could be met by non-municipal sources. Additional needs for wastewater
 44 treatment and potable water could also be served by non-municipal entities. Construction of

1 Alternative 9 would not require or result in the construction of new water or wastewater treatment
 2 facilities or expansion of existing facilities. This impact would be less than significant. Mitigation is
 3 not required.

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

6 **NEPA Effects:** Potential effects associated with an increased demand for solid waste management
 7 providers in the Plan Area and surrounding communities as a result of waste generated from
 8 construction of the proposed water conveyance facilities would be similar to those described under
 9 Alternative 1A. However, there would be less solid waste generated as a result of construction
 10 because Alternative 9 would only require construction of two intake facilities. Therefore, no
 11 substantive adverse effects to solid waste management facilities are anticipated under Alternative 9.
 12 There would be no adverse effect.

13 For purposes of this analysis, an estimate of the total quantity of excavated material to be disposed
 14 at a landfill was calculated for each facility of the alternative based on construction cost estimating
 15 documents. Construction of Alternative 9 is estimated to generate 22,901 tons of excavated
 16 materials that would require disposal at a landfill, and 201,459 tons of excavated material that
 17 would require upland disposal²⁴. Of these estimates, up to 22.90 tons (i.e., 0.1% of the 22,901 tons)
 18 of excavated materials would require disposal at a landfill. Of the upland dredged material, 1,008
 19 tons would not be disposed of onsite, but rather would possibly require specialized landfill disposal
 20 due to anticipated presence of heavy metals, the pesticide DDE, and polynuclear aromatic carbons
 21 that may exceed some screening limits. Although it is not known which landfills would be utilized
 22 during construction of the proposed water conveyance facilities, disposal of demolition and
 23 excavated material would be expected to occur at several different locations depending on the type
 24 of material and its origin. It is standard practice that the construction contractors handle and
 25 dispose of all hazardous and non-hazardous materials during construction. Of the solid waste
 26 facilities in the Plan Area counties, there are 30 active facilities that can handle solid waste, including
 27 11 solid waste landfills with a remaining permitted capacity of well over 300 million tons, and 18
 28 large volume transfer/processing facilities (see Appendix 20A, Table 20A-6 for a listing of each
 29 facility's name, location, permitted capacity, remaining capacity, maximum permitted daily
 30 throughput, and proximity to the statutory Delta). According to the CalRecycle SWIS, the 11 solid
 31 waste landfills within the study area have estimated to "cease operation" dates²⁵ ranging from
 32 between 2016 and 2082. Of the remaining permitted capacity at area landfills, approximately 70%
 33 of the capacity is associated with landfills that are not expected to close for 18 to 70 more years
 34 (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).

1 Construction debris, including debris from structure demolition, power poles, utility lines, piping,
 2 and other materials would also be generated as a result of construction of this alternative. For
 3 purposes of this analysis, the volume of construction debris generated during construction was
 4 based on estimated truck trips that were assumed to be potentially associated with disposal of
 5 construction debris at a landfill. This includes all trips by trucks categorized as Heavy Construction
 6 T7 that are likely to carry debris (flatbed, dump, and tractor) detailed in Chapter 22, *Air Quality and*
 7 *Greenhouse Gases* (Table 22B-13 of Appendix 22B, *Air Quality Assumptions*). Under this alternative,
 8 there would be an average of approximately 568 trips per day²⁶, or 994,311 trips over the 9-year
 9 construction period. One truck typically holds approximately 20 cubic yards of material. Therefore,
 10 an average of 11,368 cubic yards (8,179 tons²⁷) of construction debris would be generated per day,
 11 totaling 212,782,509 cubic yards (153,203,406 tons) of construction debris over the 9-year
 12 construction period.

13 Of the estimated 153,203,406 tons of construction debris that would be generated under this
 14 alternative, it assumed that 142,479,167 tons would be divertible, and that at least 50% (or
 15 76,601,703 tons) of construction waste would be diverted (in accordance with diversion
 16 requirements set forth by the State Agency Model IWMA). Therefore, after consideration of
 17 diversion requirements, the volume of construction debris that would require disposal at landfills
 18 represents 0.25% of the remaining permitted capacity of Plan Area landfills.

19 Overall, the construction waste that could be generated by implementing Alternative 9 would be
 20 similar to Alternative 1A, and would not adversely affect capacity of available landfills because it
 21 represents a negligible amount of the total remaining permitted capacity of Plan Area landfills, and
 22 is not expected to exceed this capacity. This alternative is not expected to impact the lifespan of area
 23 landfills, because over 70% of the remaining permitted capacity is associated with landfills with
 24 expected lifespans of between 18 and 70 years—well beyond the expected timeframe for
 25 construction of BDCP facilities, when solid waste disposal services would be needed. Further, at
 26 least 50% of construction waste would be diverted (diversion requirements set forth by the State
 27 Agency Model IWMA). Further, implementation of BMP 13 (Appendix 3B, *Environmental*
 28 *Commitments*) would require development of a project specific construction debris recycling and
 29 diversion program to achieve a documented 50% diversion of construction waste. Construction of
 30 Alternative 9 would not create solid waste in excess of the permitted capacity of area landfills, nor
 31 would it adversely affect the expected lifespan of these solid waste facilities. There would be no
 32 adverse effect.

33 **CEQA Conclusion:** Based upon the capacity of the landfills in the region, and the waste diversion
 34 requirements set forth by the State of California, it is expected that construction of the proposed
 35 water conveyance facilities would not cause any exceedance of landfill capacity. This alternative is
 36 not expected to impact the lifespan of area landfills, because over 70% of the remaining permitted
 37 capacity is associated with landfills with expected lifespans of between 18 and 70 years—well
 38 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.

1 services would be needed. Construction of Alternative 9 would not create solid waste in excess of
 2 the permitted capacity of area landfills, nor would it adversely affect the expected lifespan of these
 3 solid waste facilities. Therefore, there would be a less than significant impact on solid waste
 4 management facilities. No mitigation is required

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

7 **NEPA Effects:** While utility facilities exist in the general location of water conveyance corridors
 8 under Alternative 9, construction activity would not be required at most utility crossings.
 9 Construction activities under Alternative 9 have the potential to interfere with five overhead power/
 10 electrical transmission lines and one natural gas pipeline (Table 20-5). The conveyance alignment
 11 constructed under this alternative would cross or interfere with approximately 27 miles of
 12 agricultural delivery canals and drainage ditches, including approximately 8 miles on Victoria Island,
 13 4 miles on Jones Tract, 4 miles on Coney Island, and 4 miles on Woodward Island. Additionally,
 14 approximately 370 irrigation and drainage facilities exist along the corridors used for water
 15 conveyance under this alternative. While some of these would not be affected by constructing
 16 Alternative 9, others lie in areas designated for dredging, levees, canals, siphons, pumping plants,
 17 and operable barriers. The potential exists for construction of the proposed conveyance facilities to
 18 cause disruptions to agricultural infrastructure in the Plan Area. Chapter 14, *Agricultural Resources*,
 19 addresses potential conflicts with existing agricultural irrigation and drainage facilities as a result of
 20 construction. Further, construction of project facilities would involve site grading, trenching, boring,
 21 and other excavation work. Ground disturbance has potential to damage utility infrastructure and
 22 disrupt delivery of utility services.

23 The potential damage and disruption to buried and overhead electrical transmission lines would be
 24 similar for telecommunications. Because relocation and disruption of existing utility infrastructure
 25 would be required under this alternative and would have the potential to create effects through the
 26 relocation of facilities, this alternative would result in an adverse effect on utilities.

27 Mitigation Measures UT-6a, UT-6b, and UT-6c would be available to reduce the severity of this effect.
 28 If coordination with all appropriate utility providers and local agencies to integrate with other
 29 construction projects and minimize disturbance to communities were successful under Mitigation
 30 Measure UT-6b, the effect would not be adverse.

31 **CEQA Conclusion:** Under this alternative, most features would avoid disrupting existing facilities by
 32 crossing over or under infrastructure. However, construction of facilities would conflict with
 33 existing utility facilities in some locations. Regional power transmission lines and one natural gas
 34 pipeline would possibly require relocation. Additionally, active gas wells may need to be plugged
 35 and abandoned. Because the relocation and potential disruption of utility infrastructure would be
 36 required, this impact is significant and unavoidable.

37 Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce these impacts. If coordination
 38 with all appropriate utility providers and local agencies to integrate with other construction projects
 39 and minimize disturbance to communities were successful under Mitigation Measure UT-6b, the
 40 impact could be less than significant.

41 **Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure**

42 Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A.

1 **Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or**
 2 **Minimizes Any Effect on Operational Reliability**

3 Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

4 **Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or**
 5 **Minimizes Any Effect on Worker and Public Health and Safety**

6 Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A.

7 **Impact UT-7: Effects on Public Services and Utilities as a Result of Operation and Maintenance**
 8 **of the Proposed Water Conveyance Facilities**

9 **NEPA Effects:** Similar to Alternative 1A, the proposed water conveyance facilities under this
 10 alternative would be operated to provide diversions up to a total of 15,000 cfs from new north Delta
 11 intakes. Potential effects associated with operation and maintenance of water conveyance facilities
 12 would be similar to those described under Alternative 1A. For the purposes of this analysis, it was
 13 estimated that operations and maintenance would require approximately 120 workers (Table 20-2),
 14 including but not limited to maintenance, repair crew, pumping plant crew, and dewatering crew.
 15 Therefore, Alternative 9 would not result in physical effects associated with the provision of new or
 16 physically altered government facilities.

17 Because requirements for water and wastewater treatment under operations and maintenance of
 18 the water conveyance facilities would be primarily associated with intakes and intake pumping
 19 plant facilities, these effects would differ from those described under Alternative 1A because this
 20 alternative would build two fish-screened intakes, and would not include pumping plant facilities.
 21 Similar to Alternative 1A, these screens would require annual (or more frequent) pressure washing.
 22 Water needs related to restrooms, showers, and equipment cooling would be associated with two
 23 smaller pumping plants and potentially with control buildings constructed adjacent to operable
 24 barriers. Quantities of water needed for these purposes, however, would still be anticipated to be
 25 relatively small compared with municipal supplies. Additionally, water supplies and wastewater
 26 treatment services would potentially be provided by non-municipal facilities.

27 Similar to Alternative 1A, the operation and maintenance activities associated with the proposed
 28 water conveyance facilities are not expected to generate solid waste sufficient to increase demand
 29 for solid waste management providers in the Plan Area and surrounding communities. Unlike the
 30 intake structures associated with Alternative 1A, the two intake structures built as part of
 31 Alternative 9 would not require sedimentation basins or solids lagoons.

32 While improvements to the existing physical power transmission system are not anticipated to be
 33 necessary under Alternative 9, successful operation of the separate corridors would require
 34 relocation, disruption, and alteration of existing utilities. Two existing water intake structures are
 35 located on or connected to the proposed fish movement corridor. To minimize fish loss during
 36 operations, implementation of this alternative would require the Old River intake structure owned
 37 by the Contra Costa Water District to be decommissioned. In the absence of this intake, the water
 38 district may need to construct additional facilities to continue the diversion of current water supply
 39 volumes. Another pump station, which is owned and operated by the East Contra Costa Irrigation
 40 District, is located at the end of Dredge Cut off of Indian Slough near Discovery Bay. This facility
 41 would be evaluated for its potential impact on the fish movement corridor and may require
 42 relocation, which could trigger environmental effects.

1 Agricultural drainage facilities would also require modification in order to separate the Water
 2 Supply Corridors from the Fish Movement Corridors. Drainage facilities pumping along Middle River
 3 in Mandeville Island, Bacon Island, Woodward Island, and Victoria Island would need to relocate
 4 their discharge points from Middle River to Old River. Discharge outlets for drainage pumps along
 5 Middle River in Medford Island, McDonald Island, and Lower/Upper Jones Tract would need to be
 6 moved from Middle River to Whiskey Slough-Turner Cut and Stockton Deep Water Channel. Finally,
 7 drainage pumping along Victoria Canal in Union Island would need to relocate discharge outlets
 8 from Victoria Canal to Grant Line Canal. Because these modifications could create environmental
 9 effects, this impact would be considered adverse. Mitigation Measures UT-6a, UT-6b and UT-6c
 10 would be available to lessen the severity of this effect.

11 **CEQA Conclusion:** Operation and maintenance of the proposed conveyance facility would not result
 12 in physical impacts associated with the provision of new or physically altered government facilities
 13 due to the increased need for public services. While operation and maintenance of the water
 14 conveyance facilities under this alternative would require potable water and would produce
 15 wastewater, the volume of water needed and wastewater discharged are not anticipated to exceed
 16 capacity of existing facilities or require the alteration or expansion of water or wastewater
 17 treatment infrastructure. Construction and maintenance activities associated with the proposed
 18 water conveyance facilities would result in a less than significant impact on solid waste management
 19 facilities.

20 Under this alternative, operation of project facilities would conflict with existing utility facilities.
 21 Existing intakes would require decommissioning and potential relocation. Agricultural drainage
 22 ditches would need to relocate their discharge points. Because the relocation and potential
 23 disruption of utility infrastructure would be required this could create environmental impacts that
 24 would be considered significant. Mitigation Measures UT-6a, UT-6b, and UT-6c would reduce these
 25 effects, but not to a less than significant level. Overall, the impact on public services and utilities
 26 would be considered significant and unavoidable.

27 **Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure**

28 Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A.

29 **Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or** 30 **Minimizes Any Effect on Operational Reliability**

31 Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

32 **Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or** 33 **Minimizes Any Effect on Worker and Public Health and Safety**

34 Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A.

35 **Impact UT-8: Effects on Public Services and Utilities as a Result of Implementing the** 36 **Proposed CM2-CM11**

37 **NEPA Effects:** Potential effects associated with the need to construct new government facilities to
 38 meet an increased need for public services resulting from the implementation of restoration
 39 conservation measures and those measures designed to reduce the effect of species-level stressors
 40 would be similar to those under Alternative 1A. Potential variation from Alternative 1A would be

1 anticipated to be minor but could result from the selection of different areas for restoration
2 activities based on the location of the physical water conveyance features associated with each
3 alternative. Because the location for the implementation of conservation activities is not known at
4 this point, it is not possible to determine whether the construction of conservation measures would
5 require demolition and replacement of a government facility.

6 Effects on municipal water facilities from conservation measures would be similar to those for
7 Alternative 1A. Some activities associated with these measures could require municipal water and
8 wastewater treatment services; however, because the location and construction and operational
9 details (i.e., water consumption and water sources associated with conservation measures) of these
10 facilities and programs have not yet been developed, the need for new or expanded water or
11 wastewater treatment facilities is uncertain.

12 Potential effects associated with an increase in demand for solid waste management providers in
13 the Plan Area and surrounding communities from solid waste generated by construction and
14 operation of the proposed conservation measures would be similar to those described under
15 Alternative 1A. Based on the capacity of the landfills in the region, and the waste diversion
16 requirements set forth by the State of California, it is expected that construction and operation of the
17 proposed conservation measures would not cause any exceedance of landfill capacity.

18 Conservation measures including habitat restoration and enhancement would be similar to those
19 under Alternative 1A. The implementation of conservation measures could result in utility service
20 disruption or possible damage to underground utilities. Similarly, the long-term conversion of
21 existing utility corridors to habitat purposes could require the relocation of utility infrastructure,
22 which could carry environmental effects. Mitigation Measures UT-6a, UT-6b, and UT-6c would be
23 available to reduce the severity of these effects.

24 Potential effects of implementing conservation measures on law enforcement, fire protection and
25 emergency response services within the ROAs would primarily involve demand for services related
26 to construction site security and construction-related accidents. Because of the scale and duration
27 of construction associated with implementing conservation measures, there could be an increased
28 demand for public services. This effect would not be considered adverse with the implementation of
29 environmental commitments described in Appendix 3B, *Environmental Commitments*. These
30 environmental commitments have been incorporated into this alternative and would provide for
31 onsite security at construction sites and minimize construction-related accidents associated with
32 hazardous materials spills, contamination, and fires that may result from construction of the
33 conservation measures.

34 Further, the ROAs extend beyond the statutory Delta so the increase in demand for services would
35 be distributed across the study area. Implementing the proposed conservation measures would not
36 result in potential effects associated with the need to construct new government facilities as a result
37 of increased need for public services (i.e., law enforcement, fire protection, public schools).

38 The locations, construction, and operational details for these and other conservation measures have
39 not been identified. Adverse effects due to the construction, operation and maintenance activities
40 associated with the conservation measures are not expected to result in the need for new
41 government facilities to provide public services or the need for new or expanded water or
42 wastewater treatment facilities based on increased demand, or the potential for the disruption or
43 relocation of utilities. Further, no substantive adverse effects to solid waste management facilities
44 are anticipated. Potential effects of implementing conservation measures on law enforcement, fire

1 protection and emergency response services within the ROAs would not be adverse with the
 2 incorporation of environmental commitments into this alternative and would minimize
 3 construction-related accidents associated with hazardous materials spills, contamination, and fires
 4 that may result from construction of the conservation measures. However, because the location and
 5 construction and operational details (i.e., water consumption and water sources associated with
 6 conservation measures) related to these facilities and programs have not yet been developed, the
 7 need for new or expanded water or wastewater treatment facilities is uncertain and this effect
 8 would be adverse.

9 **CEQA Conclusion:** Implementation of the proposed conservation measures would not likely require
 10 alteration or construction of new government facilities due to increased need for public services and
 11 utilities. Several measures to reduce stressors on covered species could result in water supply
 12 requirements, but are not expected to require substantial increases in demand on municipal water
 13 and wastewater treatment services. Construction and operation activities associated with the
 14 proposed conservation measures would result in a less than significant impact on solid waste
 15 management facilities based upon the capacity of the landfills in the region, and the waste diversion
 16 requirements set forth by the State of California. Potential impacts of implementing conservation
 17 measures on law enforcement, fire protection and emergency response services within the ROAs
 18 would be less than significant with the incorporation of environmental commitments into this
 19 alternative and would minimize construction-related accidents associated with hazardous materials
 20 spills, contamination, and fires that may result from construction of the conservation measures.
 21 However, the location and construction and operational details (i.e., water consumption and water
 22 sources associated with conservation measures) of these facilities and programs have not yet been
 23 developed. Therefore, the need for new or expanded water or wastewater treatment facilities and
 24 the potential to disrupt utilities in the study area is unknown. Mitigation Measures UT-6a, UT-6b,
 25 and UT-6c would reduce the significance of impacts on utilities; however, it remains uncertain
 26 whether this impact would be reduced to a less than significant level. Therefore, this would be a
 27 significant unavoidable impact.

28 **Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure**

29 Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A.

30 **Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or** 31 **Minimizes Any Effect on Operational Reliability**

32 Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

33 **Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or** 34 **Minimizes Any Effect on Worker and Public Health and Safety**

35 Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A.

36 **20.3.3.17 Cumulative Analysis**

37 **Assessment Methodology**

38 This cumulative effects analysis considers the incremental effects on public services or utilities as a
 39 result of the no action and action alternatives in the Plan Area, when taking into consideration past,
 40 present, and reasonably foreseeable future projects. For this analysis, the projects considered are

1 listed in Table 20-6, Public Services and Utilities Effects of Plans, Policies, and Programs Considered
 2 for Cumulative Analysis. This list has been drawn from a more substantial compilation of past,
 3 present, and reasonably foreseeable programs and projects included in Appendix 3D, *Defining*
 4 *Existing Conditions, the No Action/No Project Alternative, and Cumulative Impact Conditions.*

5 **Table 20-6. Public Services and Utilities Effects of Plans, Policies, and Programs Considered for**
 6 **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: <ul style="list-style-type: none"> • 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.

1

2 Demand for public services, such as law enforcement, fire protection, and medical services are
3 expected to change as a result of past, present, and reasonably foreseeable future projects, and
4 typically increase in correlation with population growth and changes in economic activity in the
5 region. Cumulative effects related to public services and utilities may also result from past, present,
6 and reasonably foreseeable future projects that cause disruption to utility services and/or conflict
7 with a public facility (i.e., physically traverse such a facility).

8 The following list of ongoing and reasonably foreseeable future projects were reviewed for their
9 potential for effects on public services and utilities, that when considered with the alternatives, may
10 result in cumulative effects.

1 In addition to the ongoing and reasonably foreseeable future projects listed in Table 20-6,
 2 development projects and other projects implemented under city and county general plans within
 3 the Plan Area may result in effects to public services and utilities.

4 **No Action Alternative**

5 The cumulative effect of the No Action Alternative combined with other local and regional projects
 6 as presented in Table 20-6 would be minor because of the limited development allowed in the Delta
 7 primary zone. Public services such as law enforcement, fire protection, emergency response
 8 services, public medical services, public schools, libraries, or other services would operate and
 9 expand as needed to appropriately serve the Plan Area in accordance with applicable general plans
 10 and local, state, and federal laws pertaining to service levels. Continued implementation of SWP/CVP
 11 operations, maintenance, enforcement, and protection programs by federal, state, and local agencies
 12 and non-profit groups, as well as projects that are permitted or under construction, would include
 13 typical design and construction practices to avoid or minimize potential impacts on public services
 14 and utility systems, and are not expected to be adverse.

15 The Delta and vicinity are within a highly active seismic area, with a generally high potential for
 16 major future earthquake events along nearby and/or regional faults, and with the probability for
 17 such events increasing over time. Based on the location, extent and non-engineered nature of many
 18 existing levee structures in the Delta area, the potential for significant damage to, or failure of, these
 19 structures during a major local seismic event is generally moderate to high. For major earthquakes
 20 along larger faults, ground rupture can extend for considerable distances (hundreds or thousands of
 21 feet), with associated risks for surface and subsurface structures such as buildings and utilities (e.g.,
 22 gas or water pipelines). See Appendix 3E, *Potential Seismic and Climate Change Risks to SWP/CVP*
 23 *Water Supplies* for more detailed discussion. In instances of a catastrophic event due to climate
 24 change or a seismic event, there would also be a potential for adverse effect to public services (such
 25 as emergency response) and facilities (such as hospitals). While similar risks would occur under
 26 implementation of the action alternatives, these risks may be reduced by BDCP-related levee
 27 improvements along with those projects identified in Table 20-6.

28 **Impact UT-9: Cumulative Effects on Public Services and Utilities from Construction Activities** 29 **Occurring Within the Delta**

30 **NEPA Effects:** Implementation of the BDCP and other local and regional projects as presented in
 31 Table 20-6, could contribute to regional impacts on public services and utilities.

32 **Public Services**

33 Construction activities associated with Alternatives 1A through 9 could increase demand for public
 34 services in the Plan Area to a degree that new government facilities are needed to meet additional
 35 needs. Alternatively, construction activities could require relocation of existing government
 36 facilities. Construction or relocation of these facilities would be adverse due to resulting
 37 environmental effects.

38 Other past, present, and probable future projects and programs in the region that are identified in
 39 Table 20-6 and Appendix 3D, *Defining Existing Conditions, the No Action/No Project Alternative, and*
 40 *Cumulative Impact Conditions* have the potential to adversely affect public services. As detailed in
 41 Chapter 16, *Socioeconomics*, growth rates from 2000 to 2008 were generally higher in the smaller
 42 communities of the Plan Area than in larger cities such as Antioch and Sacramento. Further, growth

1 projections through 2060 indicate that all counties overlapping the Delta, except for Sacramento
2 County, are projected to grow at a faster rate than the state as a whole. Total population in the Delta
3 counties is projected to grow at an average annual rate of 0.9% through 2030 (California
4 Department of Finance 2007). The historic trend of limited development allowed in the Delta
5 primary zone would likely continue, and the limited future growth would minimize the potential
6 effects related to disruption to existing public services and conflicts with public facilities and
7 utilities.

8 Although the BDCP alternatives are not expected to result in adverse effects on public services and
9 utilities as a result of increased demands for services and utilities from population growth, when
10 combined with projects listed above that may generate additional demand on public services and
11 utilities, there could be a cumulative effect on public services and utilities. However, the projects and
12 types of projects listed above would be required to be consistent with specific goals, objectives,
13 policies, and implementation measures of the respective county's general plan where the project or
14 development is proposed. The county general plans, as described under the Regulatory Setting of
15 this chapter provide guidance and regulation for the provision of public services and utilities within
16 the respective jurisdiction. Though past, current, and future projects may result in additional
17 demands on public services and utilities, the regulatory framework that governs each county within
18 the Plan Area is expected to mitigate any potential adverse effects on service levels and disruption to
19 such services. There would be no cumulative effect on public services as a result of increased
20 demand.

21 The projects in Table 20-6 may also result in demolition of a public facility, which could require
22 replacement of the facility, the construction of which could cause significant environmental effects.
23 As discussed previously under the discussion of the BDCP alternatives, any alternative that includes
24 construction of the conveyance pipeline between Intake 3 and the Intermediate Forebay
25 (Alternatives 1A, 2A, 4, 6A, 7, and 8) (Figure 20-5) or construction of the canal segment and bridge
26 (Alternatives 1B, 2B, and 6B) (Figure 20-6), would conflict with and potentially require removal of
27 the Hood Fire Station. Because none of the projects listed in Table 20-6 are known to require
28 relocation or construction of a public facility, BDCP's incremental contribution to the adverse
29 cumulative effect on public services is significant.

30 Implementation of Mitigation Measure UT-2 would lessen this effect by requiring coordination with
31 the Courtland Fire Protection District through final project design regarding potential relocation of
32 the Hood Fire Station, and the provision of a suitable permanent facility prior to any activities that
33 would disrupt fire protection in its service area within the Courtland Fire Protection District.
34 However, because the effects of constructing a new fire station are unknown, this effect would
35 remain adverse.

36 Consequently, Alternatives 1A, 1B, 2A, 2B, 4, 6A, 6B, 7 and 8 would contribute to a cumulatively
37 considerable adverse effect on public services. Alternatives 1C, 2C, 3, 5, 6C and 9 would not have a
38 cumulatively adverse effect on public services.

39 Utilities

40 Construction activities could have an adverse effect on water, wastewater and solid waste facilities.
41 Additionally, construction activities associated with BDCP (e.g., site grading, trenching, ground
42 disturbing activities) could result in the unintentional damage to or disruption of underground
43 utilities. Disruption of certain utilities, such as natural gas pipelines, could result in public health
44 hazards (e.g., explosions). Construction could also result in damage to or disruption of overhead

1 utilities when establishing electrical interconnection of the project to the electric grid. Other past,
2 present, and probable future projects and programs in the region that are identified in Table 20-6
3 and Appendix 3D, *Defining Existing Conditions, the No Action/No Project Alternative, and Cumulative*
4 *Impact Conditions* have the potential to adversely affect utilities as well and create a cumulative
5 effect.

6 Construction of BDCP Alternatives 1A through 9 is not expected to have any adverse effect on water,
7 wastewater and solid waste facilities. None of the projects listed in Table 20-6 are known to have
8 any adverse effect on water, wastewater and solid waste facilities. Therefore, there would be no
9 cumulative effect on these utilities.

10 However, Alternatives 1A through 9 would require the relocation and disruption of utility
11 infrastructure, including existing water, sewer, storm drain, natural gas, oil, electric, and/or
12 communication lines, and would have the potential to create adverse effects through the relocation
13 of facilities. Because the relocation and potential disruption of utility infrastructure would be
14 required and could create environmental impacts, this effect would be adverse. Other past, present,
15 and probable future projects and programs in the region that are identified in Table 20-6 and
16 Appendix 3D, *Defining Existing Conditions, the No Action/No Project Alternative, and Cumulative*
17 *Impact Conditions* have the potential to result in relocation and disruption of utility infrastructure.

18 The Suisun Marsh Habitat Management, Preservation, and Restoration Plan would damage utility
19 facilities during construction and restoration activities. However, mitigation was able to reduce it to
20 less than significant. Because no other projects are known to result in relocation and disruption of
21 utility infrastructure and the Suisun Marsh Habitat Management, Preservation, and Restoration Plan
22 was able to reduce this effect to not adverse through mitigation measures, BDCP's incremental
23 contribution to the adverse cumulative effect on utilities is significant.

24 Implementation of Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce the severity
25 of this effect, but the effect would remain adverse. Consequently, Alternatives 1A through 9 would
26 contribute to a cumulatively considerable adverse effect on utilities.

27 Overall, Alternatives 1A, 1B, 2A, 2B, 4, 6A, 6B, 7 and 8 would contribute to a cumulatively
28 considerable adverse effect on public services. All action alternatives would have a cumulatively
29 considerable adverse effect on utilities.

30 **CEQA Conclusion:** All action alternatives would require the relocation and disruption of utility
31 infrastructure, including existing water, sewer, storm drain, natural gas, oil, electric, and/or
32 communication lines, and would have the potential to create significant impacts through the
33 relocation of facilities. As such, the contribution of cumulative impacts under Alternatives 1A
34 through 9 is considerable. Mitigation Measures UT-6a, UT-6b, and UT-6c are available to reduce the
35 severity of this impact, but would remain cumulatively considerable.

36 The potential conflict with the Hood Fire Station as a result of implementation of Alternative 1A, 1B,
37 2A, 2B, 4, 6A, 6B, 7, or 8 is considered a significant and unavoidable impact because the effects of
38 constructing a new fire station are unknown at this time. Mitigation Measure UT-2 would be
39 available to lessen the severity of the potential impact by ensuring continuation of fire protection
40 services in the Courtland Fire Protection District service area, which is shared with the Courtland
41 Fire Station. However, this impact would remain cumulatively considerable.

1 **Mitigation Measure UT-2: Ensure the Continuation of Fire Protection Services by the**
 2 **Courtland Fire Protection District**

3 Please see Mitigation Measure UT-2 under Impact UT-2 in the discussion of Alternative 1A.

4 **Mitigation Measure UT-6a: Verify Locations of Utility Infrastructure**

5 Please see Mitigation Measure UT-6a under Impact UT-6 in the discussion of Alternative 1A.

6 **Mitigation Measure UT-6b: Relocate Utility Infrastructure in a Way That Avoids or**
 7 **Minimizes Any Effect on Operational Reliability**

8 Please see Mitigation Measure UT-6b under Impact UT-6 in the discussion of Alternative 1A.

9 **Mitigation Measure UT-6c: Relocate Utility Infrastructure in a Way That Avoids or**
 10 **Minimizes Any Effect on Worker and Public Health and Safety**

11 Please see Mitigation Measure UT-6c under Impact UT-6 in the discussion of Alternative 1A.

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