Chapter 1
Introduction

1.1 About the Delta Conveyance Project

The California Department of Water Resources (DWR), as lead agency under the California Environmental Quality Act (CEQA), has prepared this Draft Environmental Impact Report (Draft EIR) to inform decisionmakers and the public generally of the potential for significant environmental impacts from constructing and operating new State Water Project (SWP) water supply diversion and conveyance facilities in the Sacramento–San Joaquin Delta (Delta Conveyance Project [project]), to identify possible ways to minimize the significant effects, and to describe and analyze reasonable alternatives to the project.

The purpose of the project, as more fully described in Chapter 2, *Purpose and Project Objectives*, is to restore and protect the reliability of SWP water deliveries south of the Sacramento–San Joaquin Delta (Delta) consistent with the *California Water Resilience Portfolio* (California Natural Resources Agency 2020), in a cost-effective manner. The objectives focus on the SWP's ability to respond to sea level rise and climate change, minimize disruption of SWP operations from earthquakes in and around the Delta, improve water supply reliability, and provide operational flexibility.

This chapter introduces this Draft EIR and explains the history and complex issues that have led to the development of the project. This chapter also provides an overview and definition of the project area (defined in Section 1.4, *Project Area and Study Areas*), summarizes the statutory basis and intended uses of the Draft EIR, describes the various agencies' roles and responsibilities, discusses the approval process, and identifies issues of known controversy and unresolved issues.

The U.S. Army Corps of Engineers (USACE) is preparing a separate Draft Environmental Impact Statement (Draft EIS) for the project as the federal lead agency under the National Environmental Policy Act (NEPA). Its role is outlined in Section 1.5.3.1, *U.S. Army Corps of Engineers*. Although the Draft EIR and Draft EIS are being prepared independently, DWR and the USACE are coordinating to ensure consistency between the two documents for ease of public review. Additionally, this Draft EIR was prepared in anticipation of the fact that the USACE's Draft EIS would reference the Draft EIR as appropriate. For that reason, certain aspects of this Draft EIR also are designed to meet NEPA requirements. For more detail, see Chapter 4, *Framework for the Environmental Analysis*.

1.2 Background

The Delta, shown in Figure 1-1, is an expansive inland river delta and estuary in Northern California. Portions of six counties—Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo—make up the Delta, which is defined by statute under California Water Code (Wat. Code) Section 12220. The Delta is formed at the western edge of the Central Valley by the confluence of the Sacramento and San Joaquin Rivers and lies just east of where the rivers enter Suisun Bay. The watersheds of the Sacramento and San Joaquin Rivers are at the core of California's water delivery system, which conveys water to millions of Californians throughout the San Francisco Bay Area (Bay Area), the Central Valley, the Central Coast, and Southern California. Water from these watersheds is used in

the Delta, the Sacramento River watershed, the San Joaquin River watershed, the Bay Area, the Central Valley, the central coast region, and Southern California.

The Delta is also important to the state and the region for reasons other than water supply. It provides rich and productive habitat for more than 500 species of fish and wildlife and supports a number of endangered and threatened species. While the Delta represents less than 1% of California's land area, and Delta land devoted to agriculture represents approximately 2% of agricultural land in California, Delta agriculture's economic contribution is substantial. Delta agriculture and the food and beverage industries it supports accounted for $2.7 billion in economic output in five[1] Delta counties alone, and about $4.6 billion statewide in 2016 (Delta Protection Commission 2020:38). The Delta is also a recreational destination. Its waterways and managed wetlands support many activities including fishing, boating, and hunting. In addition, it sustains distinctive geographical and cultural characteristics and is home to extensive infrastructure of statewide importance, such as aqueducts, natural gas pipelines, and electricity transmission lines; railroads, commercial navigation (ports and shipping channels), and recreational navigation (marinas, docks, launch ramps); agricultural production and distribution; wildlife refuges; public and private levee systems; and highways. The ports of Stockton and West Sacramento are focal points of regional economic development and rely on through-Delta shipping channels. State Route (SR) 12, SR 4, and through-Delta railways are also important links in the Delta transportation system (Delta Protection Commission 2012:207). More detail on agricultural resources and recreational opportunities in the Delta is provided in Chapter 15, *Agricultural Resources*, and Chapter 16, *Recreation*, respectively.

1.2.1 Delta Historical Context

For millennia before the Gold Rush, the Delta was a dynamic floodplain and tidal marshland that drained the 45,000-square-mile Central Valley watershed. Change was driven by the seasons and the tides and other periodic natural and human phenomena (Delta Stewardship Council 2013a:3, 8–9). Since the 1850s, construction of levees and channelization of rivers facilitated the reclamation of the Delta for agriculture, human habitation, and other human uses. The hydrodynamics of the Delta, as well as downstream locations including Suisun Bay and Suisun Marsh, have been transformed by reclamation, flood control projects, sedimentation from upstream mining, water supply projects, and navigation improvements (California Department of Water Resources 2013:1-9).

1.2.2 Water Supply Development and Management

The development and management of California's surface water resources is a process that has spanned many decades, and has involved a variety of local, state, and federal agencies, as well as private companies. The Delta is the hub for much of the state's water supply. The two major water projects—SWP and Central Valley Project (CVP)—were initiated to serve agricultural, environmental, and municipal water users throughout California. Other projects that divert water from the watersheds that supply the Delta include the San Francisco Public Utilities Commission's Hetch Hetchy Reservoir and aqueduct system, East Bay Municipal Utility District's Mokelumne aqueduct, and an extensive network of locally constructed dams, canals, and diversions (Delta Stewardship Council 2013a:9; Delta Stewardship Council 2018:76).

[1] Only a very small section of Alameda County is located in the statutory Delta and is mostly in pasture (Delta Protection Commission 2020:5).

These projects and the vast network of waterways that make up the Delta collect and move fresh, affordable water to homes, farms, refuges, and businesses throughout major regions of the state in Northern, Central, and Southern California.

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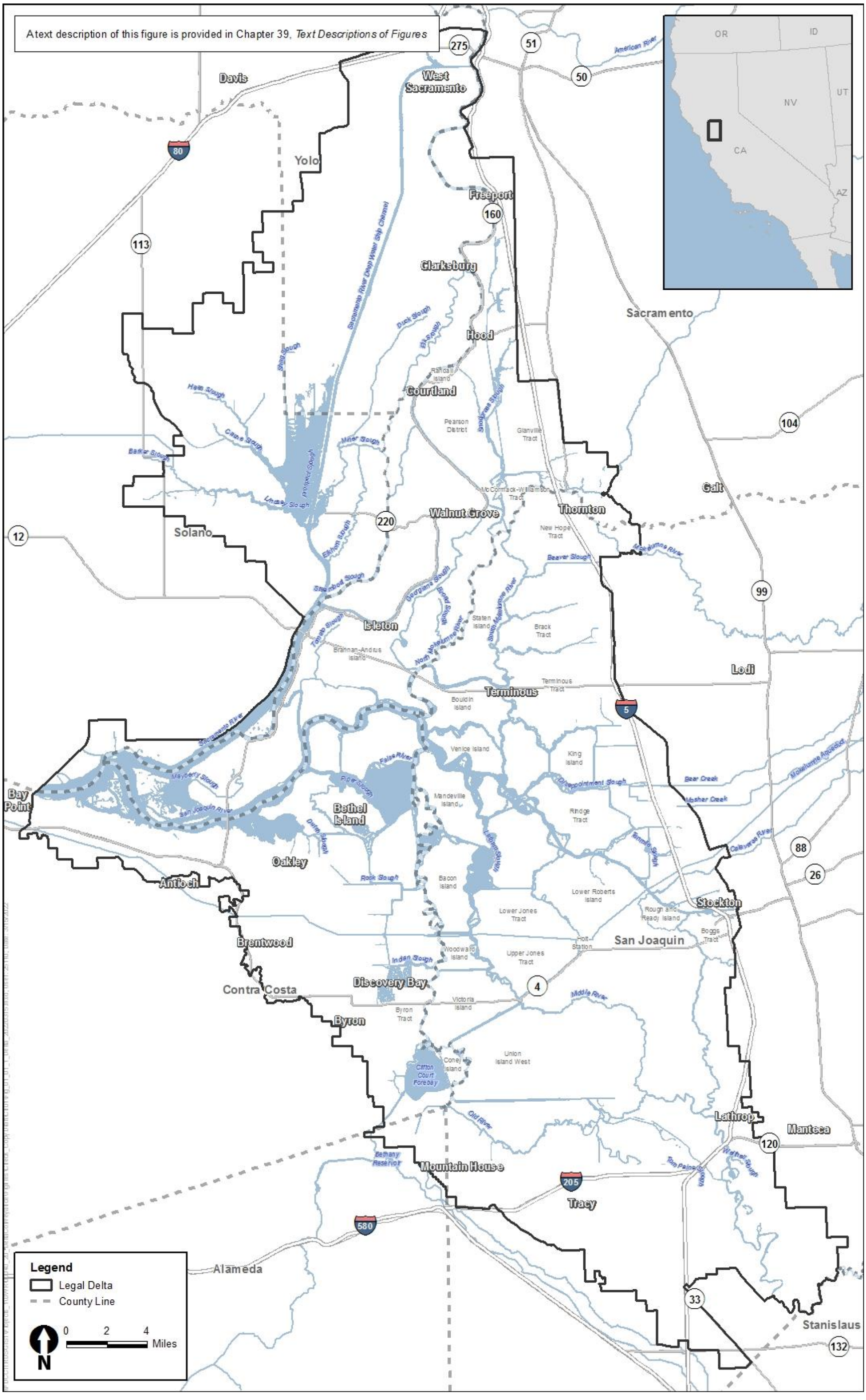

Figure 1-1. The Sacramento–San Joaquin Delta

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The existing SWP and CVP water infrastructure are operated in a coordinated manner. Joint points of diversion allow the use of one project's diversion facility by the other project under certain conditions. In part, both the SWP and CVP water delivery systems rely on runoff and reservoir releases in areas upstream of the Delta to deliver contracted water via the Sacramento and San Joaquin Rivers to Delta export pumps in the south Delta. DWR operates the SWP and exports water from the Delta into the SWP system at the Harvey O. Banks Pumping Plant (Banks Pumping Plant), which supplies the California Aqueduct, and the South Bay Aqueduct, and at the Barker Slough Pumping Plant, which supplies the North Bay Aqueduct. The Bureau of Reclamation (Reclamation) operates the CVP and exports water into the CVP system at the C. W. "Bill" Jones Pumping Plant (Jones Pumping Plant), which supplies the Delta-Mendota Canal. Figure 1-2 shows the major components of the SWP and CVP, and Figure 1-3 shows the extent of the SWP and CVP service areas and export service areas (i.e., those areas that receive water conveyed to and through the Delta and delivered from the Banks, Jones, and other pumping plants).

Regulatory standards in recent decades have changed how the SWP and CVP operate, considerably reducing the long-term average amounts of water conveyed through the south Delta.

In addition to the SWP and CVP, other resources, facilities, and practices—such as groundwater storage, conservation, desalination, recycling, and reuse—are being used to help meet growing water demands for urban, agricultural, and environmental uses. While these other resources, facilities, and practices are independent from the project, these elements also contribute to the overall water needs of the state, as described in the *California Water Resilience Portfolio* (California Natural Resources Agency 2020). Moreover, they are collectively vital and relevant to understanding water supply development and management in California.

1.2.2.1 State Water Project

The SWP is the largest state-built water storage and conveyance project in the United States. The SWP includes 36 storage facilities, 21 pumping plants, five hydroelectric power plants, four pumping-generating plants, and approximately 700 miles of canals, tunnels, and pipelines (California Department of Water Resources 2022a). DWR holds water supply contracts with 29 public entities located throughout the state, collectively referred to as public water agencies or water contractors. These water contractors in turn deliver water to wholesalers or retailers, or deliver it directly to agricultural and municipal and industrial (M&I) water users (Bureau of Reclamation and California Department of Water Resources 2005:1-20). Total SWP deliveries averaged about 1.96 million acre-feet [MAF] of water per year from 2009 to 2018 (California Department of Water Resources 2020:18). During the 1999 to 2008 period, SWP deliveries averaged 2.86 MAF/year (California Department of Water Resources 2002, 2008). Of the contracted water supply, approximately 70% goes to M&I users and 30% to agricultural users (Santa Clara Valley Water 2022). SWP deliveries provide water to 27 million Californians and about 750,000 acres of irrigated farmland (California Department of Water Resources 2021a:1).

Other SWP functions include flood management, water quality maintenance, power generation, recreation, and fish and wildlife enhancement. Major components of the SWP system are shown in Figure 1-2. More detail on the SWP facilities and service areas is provided in Chapter 6, *Water Supply*.

1.2.2.2 Central Valley Project

Major components of the CVP system are shown in Figure 1-2. Reclamation oversees operations and maintenance of the CVP and coordinates Delta operations with the SWP. The CVP is operated for flood management; navigation; provision of water for irrigation and domestic uses; fish and wildlife protection, restoration, and enhancement; recreation; and power generation. CVP Delta exports average about 1.76 MAF per year between 2012 and 2021 (Bureau of Reclamation 1990–2021). During the 2002 to 2011 period, exports averaged about 2.53 MAF per year (Bureau of Reclamation 1990–2021). The relevance of the CVP to the project alternatives is described in Chapter 3, *Description of the Proposed Project and Alternatives*. More detail on the CVP facilities and service areas is provided in Chapter 6.

1.2.2.3 In-Delta Water Supply and Use

In-Delta water use has remained relatively constant over the previous 100 years and averages about 4% (0.9 MAF) of inflows into the Delta (Delta Stewardship Council 2018:83). Most of this water is used for agricultural irrigation and small and large communities throughout the Delta. In general, irrigation water is diverted directly from Delta waterways and transported to agricultural lands via irrigation and drainage canals. Irrigation and drainage canals in the Delta are typically operated and maintained by reclamation districts, irrigation districts, and water agencies. In some cases, however, water is pumped directly into field furrows. See Chapter 6 for more information regarding M&I Delta water diversion and Chapter 8, *Groundwater*, for discussion of groundwater in the Delta.

1.2.3 Issues Affecting the Delta and the SWP Today

1.2.3.1 California Water Supply

In California, most precipitation falls in the north, but the majority of water demand is in the south. With the construction of the CVP and SWP, the Delta became a critical link in the state's complex water distribution system. Valley rivers and Delta channels transport water sent from upstream reservoirs to the south Delta, where state and federal facilities (the Banks Pumping Plant and the Jones Pumping Plant) pump water into the California Aqueduct and CVP canals, as well as via other smaller conveyance systems (i.e., North and South Bay Aqueducts). The Delta is a conduit for water that is used for a wide range of in-stream, riparian, and other beneficial uses, including providing critical habitat for several native aquatic and terrestrial species. Approximately 27 million people, or 3 out of 5 Californians, receive clean, affordable water that flows through the SWP infrastructure in the Delta. Water supplied by the SWP has benefits for the entire state and has helped California become the fifth largest economy in the world.

The water balance within the Delta—that is, the comparison of total inflows to total outflows—is controlled by supply from the Sacramento and San Joaquin Rivers, eastside rivers and streams (e.g., Mokelumne and Cosumnes Rivers), contributions from Coast Range watersheds and upstream diversions, demand from in-Delta users, outflows from the Delta to the San Francisco Bay and Pacific Ocean, and exports to agricultural and M&I users outside of the Delta. The largest system outflow is the portion of inflow that travels through the Delta, contributes to in-channel and wetland habitats, and exits through the San Francisco Bay to the Pacific Ocean. The second largest outflows are exports through the SWP and the CVP, followed by in-Delta use and local diversions.

Figure 1-2. Major Components of the SWP and CVP

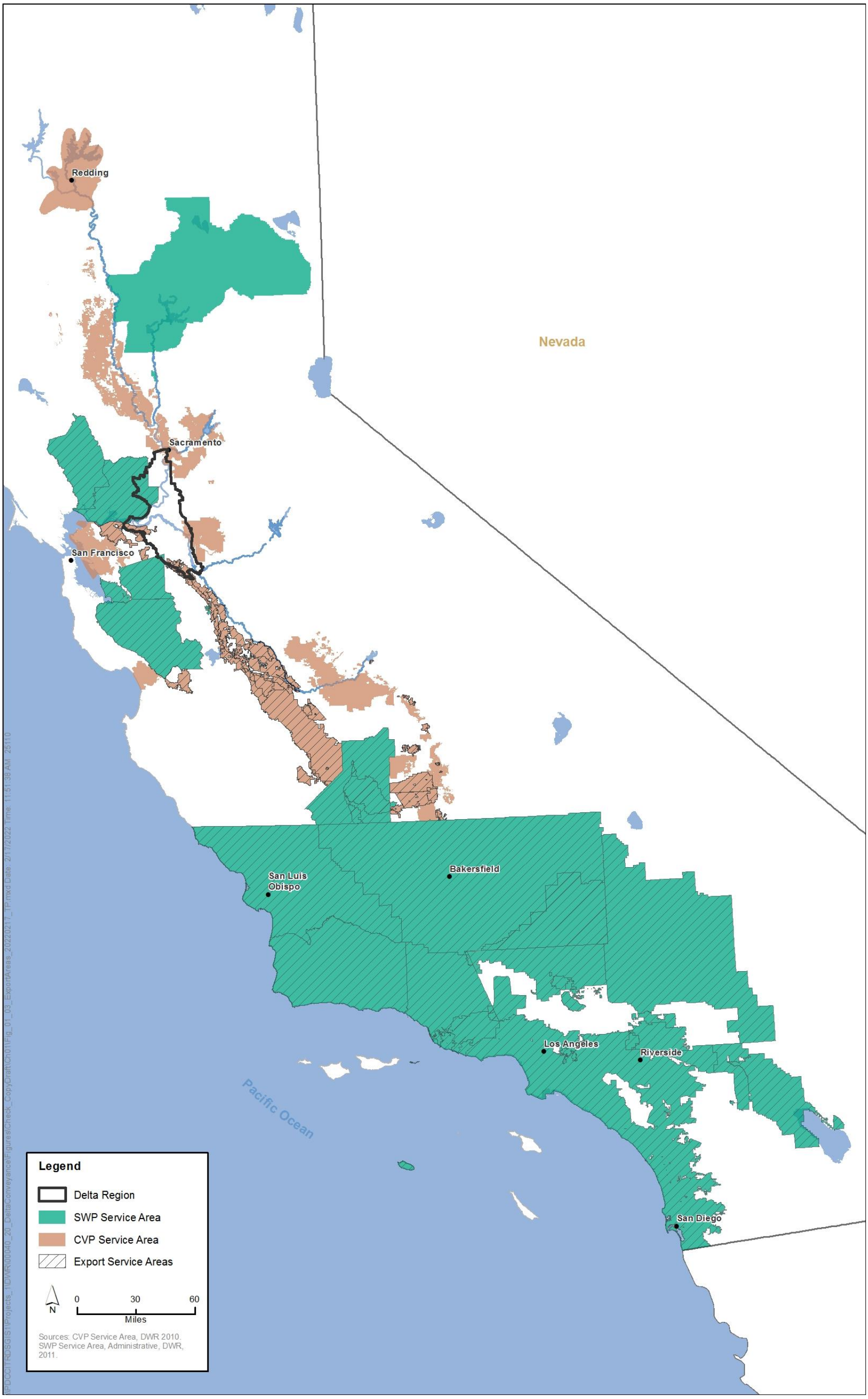

Figure 1-3. SWP and CVP Service Areas

Herren and Kawasaki (2001) found more than 3,000 diversions that remove water from upstream and in-Delta waterways for agriculture and M&I uses. Of these diversions, 722 were in the mainstem San Joaquin and Sacramento Rivers and 2,209 were in the Delta. Of the more than 2,200 water diversions in the Delta, most were unscreened and used for in-Delta agricultural irrigation (Herren and Kawasaki 2001:347). Although there has been some additional screening in the Delta, the California Department of Fish and Wildlife's (CDFW) Fish Passage Assessment Database shows that most diversions remained unscreened within the Delta (California Department of Fish and Wildlife 2022).

Meeting the needs of a large and geographically diverse population in a cost-effective manner while accounting for extreme variability of annual precipitation, climate change conditions, and associated sea level rise has created challenging conditions for water management in California. In addition to supplying water for agricultural and M&I needs and a growing California population, the SWP and CVP must meet operational requirements in State Water Resources Control Board (State Water Board) Water Right Decision-1641 (D-1641) to help meet Delta water quality objectives, and in federal biological opinions and state incidental take permits (ITP) that are intended to protect certain fish and wildlife species. Meeting these Delta water operational requirements within the context of California's fluctuating hydrology has resulted in an overall reduced and less reliable water supply.

In the Sacramento–San Joaquin Delta Reform Act of 2009, the California State Legislature recognized a linkage between ecosystem decline in the Delta and reduced reliability of water exported from the Delta to millions of Californians and acres of productive farmland. Accordingly, it adopted the coequal goals for the Delta "of providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem" (California Public Resources Code [Pub. Resources Code] § 29702(a)), acknowledging that providing a more reliable water supply involves "new … Delta conveyance facilities."

When the Delta Reform Act was enacted in 2009, planning was underway on the Bay Delta Conservation Plan (BDCP), an ambitious Habitat Conservation Plan/Natural Community Conservation Plan (HCP/NCCP) that included new Delta conveyance among a host of conservation measures, as explained in more detail in Section 1.2.4.4, *The Bay Delta Conservation Plan and California WaterFix*. In 2015, DWR announced it would consider and study a set of non-conservation plan conveyance-only alternatives to the BDCP, including the California WaterFix. DWR subsequently approved the California WaterFix. In 2019, however, then newly elected Governor Newsom announced that he did not support California WaterFix, which had two main tunnels, but did support a single-tunnel project (see discussion in Section 1.2.4.4).

Under Governor Newsom's leadership, California has proposed a broad new portfolio approach to meeting California's overall water supply challenges called the *California Water Resilience Portfolio* (California Natural Resources Agency 2020) that prioritizes conservation, recycling, groundwater management, and more, which will build the resilience of local water systems across the state. One proposal within the overall portfolio is to plan, permit, and build new diversion and conveyance facilities in the Delta. DWR proposed and is evaluating the project consistent with the portfolio approach. Additionally, the SWP provides a critical water supply for much of the state and a foundation for the important local water supply and resiliency programs included in the portfolio. Planning a future for California while not protecting the SWP from future changes would put California's water supply and economy at risk.

Public water agencies throughout California are already pursuing local supply resiliency projects such as recycling, groundwater recharge, storage, and conservation to reduce reliance on the Delta to meet future needs. However, SWP stability in making water deliveries, in conjunction with these local efforts, helps agencies develop and maintain these important local water supplies by providing a high-quality source for blending to meet or exceed drinking water standards.

1.2.3.2 Climate Change

Climate is commonly defined as the weather averaged over a long period of time. Although the climate has changed in the past in response to natural drivers, recent changes in climate appear to be occurring at a faster rate than historical changes have occurred, appear to be accelerating, and have been unequivocally linked to human activities (Intergovernmental Panel on Climate Change 2021). Climate change has already become manifest in increased average surface temperatures around the world, raised sea levels, and changed snowpack and runoff patterns in mountainous regions like the Sierra Nevada. Global and regional climate change trends are discussed in Chapter 30, *Climate Change*.

Hydrologic conditions in the Delta are largely determined by precipitation (amount, form, and timing) in the Sierra Nevada and in other watersheds that supply the Delta, water management upstream of the Delta (e.g., reservoir releases, diversions, operation of weirs), and tidal influences. The amount and timing of rainfall directly in the Delta typically has a minor effect on flow conditions. Climate change–related effects on the Delta are generally predicted to include the following.

- Changes in precipitation within and upstream of the Delta.
- Increased surface water temperatures associated with increases in average air temperatures.
- Changes in weather patterns that could affect the frequency and magnitude of storms and storm-related high flows.
- Increased sea levels with a corresponding increase in seawater and brackish water entering the Delta from the west.

With projections of changing precipitation patterns and amounts, shifts in timing of peak flow and runoff periods, trends toward more rainfall and less snow, and impacts from sea level rise as a result of global climate change, the struggle to meet water supply demands will likely be magnified in the future.

Climate Change Effects on Hydrology

Delta inflows are mainly driven by precipitation and runoff in the river watersheds that drain into the Delta. These watersheds encompass roughly 45% of the state's surface area, stretching from the eastern slopes of the Coast Range to the western slopes of the Sierra Nevada (Lund et al. 2007:2). These Delta watersheds include high mountain areas up to 14,000 feet in elevation and the vast Central Valley of California. Areas of the watershed above 5,000 feet historically accumulate snow between October and March. The snow typically remains frozen high in the watershed until March when it begins to melt. Snowmelt runoff usually continues into July.

Snowpack accumulation and storage are important components of Delta inflow hydrology. Snowpack accumulation during winter storm events reduces the amount of precipitation that runs off directly during the storm, reducing peak stream flow volumes. Snowpack storage keeps water

high in the watershed during winter and releases it in the spring and summer when the water can be stored in reservoirs or released downstream for use. Current precipitation and runoff patterns also restrict how much water can be stored in upstream reservoirs during the winter because of requirements (determined by flood rule-curves) to maintain storage capacity to help manage downstream flood conditions.

Increased temperatures in the upper river watersheds caused by climate change threaten to disrupt this delicate water supply management balance. Warmer temperatures mean higher snowlines and more precipitation falling as rain instead of snow, which then contributes to direct runoff, increases peak stream flows, and raises the risk of levee failures and flooding. Warmer temperatures also mean that the snowpack will melt, on average, earlier in winter months, releasing more of the water to streams and rivers earlier in the year when less reservoir storage capacity is available. This hydrologic shift will continue to result in the need to release greater volumes of water from reservoirs before the irrigation season, leaving less water stored for downstream uses in spring and summer when demand is highest (Ehsani et al. 2017:422).

These changes are already being observed. Over the course of the twentieth century, warming has been prevalent over the Sacramento and San Joaquin River basins. In both the Sacramento and San Joaquin basins, the overall twentieth-century warming has been about 3 degrees Fahrenheit (°F). In the Sacramento basin, the warming trend has also been accompanied by a gradual trend, starting in the 1930s, toward a slight increase in precipitation. However, a similar precipitation trend is not evident in the San Joaquin basin (Bureau of Reclamation 2011:134). Even with the increased precipitation in the Sacramento River basin, increases in temperature have resulted in the average early spring snowpack in the Sierra Nevada decreasing. In April 2015, California snowpack held only 5% of the water it typically holds at this time of year, with some areas having no snowpack (U.S. Environmental Protection Agency 2017:5). This was the smallest April snowpack in the last 65 years, and projections indicate continued declines in snowpack in the Southwest in the future (U.S. Global Change Research Program 2014:466, 482). In addition to less snow accumulation, warmer temperatures are expected to speed snow melting, and rain falling on snow could result in more rapid runoff and flooding conditions in spring (U.S. Environmental Protection Agency 2017:5). Increasing temperatures will also increase evaporation, causing river-flow reductions and dwindling reservoir storage levels.

Climate change may also result in changes in the amount, timing, and intensity of precipitation and storm events in the Delta watershed. Precipitation in the Delta watershed is naturally variable both spatially and temporally. On average, the north Delta receives more precipitation than the south Delta, and interannual precipitation can vary by as much as 50 inches between extreme wet and extreme dry years. Most of the precipitation occurs during storms or atmospheric river events. Downscaled precipitation models for the Delta show an approximately 3-inch increase in average annual precipitation at Suisun Marsh and the north Delta by 2100 and little or no change in the central and south Delta, but these small changes are masked by the high interannual variability (Delta Stewardship Council 2021a:3-13, 3-14). Climate change is expected to exacerbate the range of extremes. Researchers call this “climate whiplash … the occurrence of extreme wet and extreme dry conditions and drastic transitions between the two …”, which are expected to become perhaps 25% more frequent by 2100 than what has occurred historically (Delta Stewardship Council 2021a:3-17). Longer, more frequent and intense atmospheric river events falling on snowpack will have a greater effect on peak streamflow and Delta inflow than projected changes in precipitation alone (Delta Stewardship Council 2021a:3-17).

As described in other sections of this Draft EIR, projections of future climate change indicate that warming in the Delta watershed is highly likely to continue and changes in precipitation patterns, while less certain, are also likely. These changes will increase the risk of degrading water supply that moves through the Delta, including reduced water quality, water supply reliability, and increased risk of interruptions in the ability to convey water through the Delta and divert water from within the Delta. Reductions in snowpack accumulation and storage will result in reduced late spring and summer Delta inflows and reduced operational flexibility. These reduced inflows combined with sea level rise (described in the following section) will result in increasing operational challenges and decreasing ability to export water from the Delta. Increases in extreme precipitation events, combined with increasing temperatures that raise the snow line and cause more of the precipitation to fall as rain instead of snow, will result in larger peak inflows into the Delta. Larger peak inflows will increase the risks of levee failures within the Delta. Flooding of Delta islands due to a levee breach could cause seawater to be drawn into the Delta, severely reducing water quality and potentially causing Delta export operations to be halted for extended periods of time.

There is limited analysis of upstream hydrological changes on Delta conditions where only the hydrological changes are considered without also considering the effects of sea level rise. However, the 2021 Delta Stewardship Council (DSC) study *Delta Adapts* indicates that the seasonal shift in precipitation patterns would have the greatest effect on reductions in water supply related to reductions in reservoir carryover storage levels (Delta Stewardship Council 2021b:15-10). Information on how changes in hydrology due to climate change were modeled and used to analyze the impacts of the alternatives are in Appendix 5A, *Modeling Technical Appendix*.

Climate Change Effects on Sea Level Rise

Rising mean sea levels are expected as a result of global warming. Sea levels are neither constant nor uniform everywhere but change continually because of interacting processes that operate on timescales ranging from hours (e.g., tides) to millions of years (e.g., tectonics). Processes that affect ocean mass, the volume of ocean water, or sea-floor topography cause sea levels to change on global scales. A warming climate causes sea levels to rise by warming the oceans, which causes seawater to expand and increases ocean volume. Warmer temperatures also accelerate melting of land ice, which transfers water to the ocean. Human activities also affect sea levels, albeit to a much more limited degree. Withdrawing water from aquifers, which eventually reaches the ocean, causes sea levels to rise. Conversely, storing water behind dams that would have otherwise reached the ocean results in reductions in sea levels (National Research Council 2012:2). At more localized scales, apparent or relative changes in sea levels can occur from vertical motion of land (e.g., subsidence, isostatic rebound [i.e., the rise of land masses previously depressed by the huge weight of ice sheets, and tectonic uplift]). Short-term localized conditions can also result in large variations in sea levels. Astronomical tides, variations in atmospheric pressure, variations in the local density of seawater from short-term climate fluctuations (such as El Niño) and changing winds (California Department of Water Resources 2009b:16) can all result in substantial changes in short-term localized sea level.

The impacts of sea level rise on California are anticipated to be significant. Delta communities can expect to see inundation, saltwater intrusion, and transportation disruptions (for people and goods); and even further from the San Francisco Bay and California coast, communities will experience the far-reaching ripple effects of coastal changes from sea level rise on lives and livelihoods (California Natural Resources Agency and Ocean Protection Council 2018:7). The *State of California Sea-Level Rise Guidance* document, initially adopted in 2010 and since updated in 2013 and 2018, provides guidance to state agencies for incorporating sea level rise projections into

planning, permitting, investment, and other decisions (California Natural Resources Agency and Ocean Protection Council 2018). Projections of sea level rise are used in the analysis of project alternatives (Appendix 5A and Chapter 30).

Rising sea levels will affect the Delta in two important ways: (1) increased risk of overtopping and other forms of levee failure, and (2) increased saline/brackish tidal pressure, which, if not counteracted by increases in freshwater outflows, will lead to increased salinity intrusion and higher salinity levels in the Delta.

Higher sea levels increase the risk of levee failure by producing higher hydrostatic loads against levees and by increasing internal seepage gradients. Much of the land in the Delta is below sea level as a consequence of ongoing subsidence. Rising sea levels would place more pressure on the Delta's already fragile levee system and could increase the risk of levee breeches as a consequence. High-water events such as storm surges and seasonal high tides could further increase the risks of levee failure.

Higher sea levels also increase the hydrostatic pressure of seawater flowing in from the Pacific Ocean and San Francisco Bay. This higher pressure can increase salinity in the Delta's inland waterways if not counteracted by increased outflows of fresh water. Greater freshwater inflows to the Delta would likely be achieved by releasing greater amounts of water from upstream reservoirs. This would reduce the amount of water available for other uses as this additional water would flow through the Delta to the ocean. Even if freshwater inflows to the Delta were increased to counteract the effect of sea level rise, increased salinity intrusion could still occur in deeper, more stratified channels by increasing density-driven flows (Fleenor et al. 2008:15). Conversely, if freshwater inflows were not increased to counteract higher hydrostatic pressures applied by increased sea level, additional saline water would flow deeper into the Delta and would increase the salinity in areas of the Delta that are already brackish. The salinity gradient would move east and water quality for in-Delta water uses and south Delta exports would be diminished (California Department of Water Resources 2009a:39; Delta Stewardship Council 2021c:2-4, 5-1).

Increasing freshwater flows to address salinity intrusion may be supplemented with the construction and operation of temporary or permanent barriers in the western and northern Delta. As an example, DWR has recently installed the West False River Drought Salinity barrier and is evaluating installing flow barriers on Steamboat and Sutter Sloughs in the north Delta. Although both actions fall within the Newsom Administration's current statewide drought declaration (State of California 2021:28–33), DWR is proceeding with a longer-term environmental planning and permitting strategy for these emergency actions.

1.2.3.3 Delta Levee Risks

The SWP currently relies on Delta channels for conveyance, an integral part of the Sacramento and San Joaquin Valleys' natural conveyance systems. Those channels are constrained by 1,100 miles of levees that provide year-round flood control with high water always against them, similar to those protecting the Netherlands. The Delta receives runoff from 40% of the state's land, and the levee system protects 738,000 acres of Delta islands, tracts, and population centers from flooding and loss of a large portion of the state's water supply. The levee systems have allowed farmers to drain and reclaim a large portion of the Delta from its original condition as a tidal marsh. These levees, made of sediment dredged from adjacent channels, excavated from island interiors, or imported from other areas by truck or barge, were built to prevent flooding and allow cultivation of the rich soil

while protecting towns, cities, and public infrastructure such as highways, railroads, and pipelines. The levees generally rest on weak, seismically unstable foundations that include loose silts, sands, and peat. Saturated soil is susceptible to liquefaction during seismic shaking and peaty organic soils tend to amplify earthquake ground shaking (Tsai 2018:182–183). This leaves water supplies vulnerable to levee failures from earthquakes and other factors.

A sound, well-maintained, levee system is vital to protect not only the farms and towns and transportation corridors on Delta islands, but, with respect to some levees, also the supply of fresh water moving through Delta waterways. When levees fail, water rushes into the lower-than-sea-level islands, pulling salt water from the Bay into the Delta. If numerous levees were to fail simultaneously in the Delta, there is a significant risk that large amounts of salt water could flow into the Delta and raise salinity levels. The resulting high salinity levels could require shutting down the Delta export pumps that supply water to millions of people and acres of agricultural land.

Most of the levees protecting the Delta (approximately 65%) are not within the federal/state Sacramento Flood Control Project system; these "non-project" levees are constructed and maintained by island landowners or local reclamation districts (Delta Stewardship Council 2020:32). These levees are generally built to an agricultural standard and may be somewhat less stable than those constructed and maintained to protect urban areas. Improvement and maintenance of the non-project levees can be very challenging. The natural peat deposits that make the Delta such a fertile farming location make poor building materials for levees and their foundations. Oxidization of these peat soils has led to island subsidence, which has increased the burden on the levee system. Another way that the Delta levees are distinguished from levees along rivers such as the Sacramento is that they are constantly exposed to water, making them more comparable to dams. However, they are not constructed or regulated to the same high engineering standards as dams. Delta levees need to withstand the daily cycle of tides, wind, and boat wakes. Levees in the west Delta receive the strongest impact from tidal influences; soils there are the least stable and most susceptible to liquefaction. Burrowing animals further threaten levees because their burrowing weakens levees before it can be detected.

Additionally, land subsidence, sea level rise, and changes in climate make Delta levees increasingly vulnerable to failure from earthquakes, floods, and other causes. The Delta's vulnerability to natural disaster has been highlighted by recent scientific analysis, which calculated the probability of levee failure due to flooding or earthquake (California Department of Water Resources 2017:3-5). Real-world events such as Hurricane Katrina and the 2011 earthquake and tsunami in Japan demonstrated the level of destruction that can result from breached levees. Although levee vulnerability in the Delta is not easy to quantify, there is a 40% probability that levee breaches on multiple delta islands will occur in the event of an earthquake (California Department of Water Resources 2009b:10).

The Delta is a region of moderate seismic hazard, with hazard generally increasing from east to west. Contributions to Delta seismic hazards come from faults near or within the Delta (e.g., Midland, Pittsburg Kirby Hills) capable of producing moderate magnitude earthquakes, and from more distant faults (e.g., San Andreas, Hayward) capable of producing large earthquakes. Delta levees on Bacon Island, Webb Tract, Venice Island, and King Island have been damaged by moderate magnitude earthquakes close to the Delta (e.g., M5.9 1980 Livermore earthquake) (Finch 1985). However, it has been over 100 years since the large 1906 San Francisco earthquake. At the time of the San Francisco earthquake, the Delta levees were relatively modest in size with little to no land subsidence behind them and roughly only 50% of the islands had been "reclaimed" (State of

California 1991:63-67). Even with their relatively low heights it was speculated that the 1906 San Francisco earthquake may have weakened Delta levees and contributed to the failure of 53 major islands during the wet winter of 1907 (Finch 1985:41).

The probabilities of moderate to large earthquake events, and related damage to or failure of Delta area levees, are generally high and increasing over time. According to the U.S. Geological Survey, there is a 72% chance of a 6.7 or greater magnitude earthquake occurring in the Bay Area by 2043 (U.S. Geological Survey 2016:1). The seismic stability risk to Delta levees has been previously quantified (Torres et al. 2000; California Department of Water Resources 2009b). Many of the related Delta islands are currently below sea level due to factors including subsidence of underlying organic soils, with this subsidence expected to continue at a generalized rate of approximately 0.25 to 0.5 inch per year until the organic content is largely depleted (Deverel et al. 2016:5). Based on the noted conditions, seismically induced levee breaches would result in the influx of seawater into the associated islands, with several resultant issues including water quality and related water supply concerns.

A major earthquake event could result in breaching or failure of existing levees within the Delta, with a substantial number of these structures exhibiting moderate to high failure probabilities (California Department of Water Resources 2009b:10). The most immediate and significant effect on water quality under such a scenario would be the influx of large volumes of seawater, brackish water, or both into the Delta as breached Delta islands flood. The corresponding shift in Delta water quality conditions would be characterized by an increase in salinity levels, including specific associated constituents such as bromide (which affects total dissolved solids concentrations and can contribute to the formation of undesirable chemical byproducts in treated drinking water). Additional water quality concerns in a large-scale levee failure scenario would include soil and agricultural-related pollutants such as organic material and hydrocarbons associated with local oil and gas exploration/production activities. The described water quality concerns, particularly the influx of seawater and brackish water and associated salinity increase, would continue for an extended period. DWR has estimated that it may take 25 to 34 months to complete repairs of levees after a major seismic event in the Delta (California Department of Water Resources 2009b:10)

The above-described seismic levee failure scenario and resultant water quality issues could generate both direct and indirect effects on water supply sources and facilities associated with the SWP. Direct effects on SWP operations would result from the potential increase in salinity (or other adverse water quality conditions) near Clifton Court Forebay at the southwestern edge of the Delta. Salinity (and/or other pollutant) levels that exceed related thresholds near export facilities would necessitate curtailing or terminating pumping, with corresponding effects on the viability of the Delta to convey SWP and CVP water for a substantial period. While it is difficult to project the level of direct effects on SWP water supplies because of the complex nature of the described earthquake and levee failure scenario, it is conceivable that Clifton Court Forebay and the Banks and Jones Pumping Plants would be largely or completely out of service for a period of months or years. Under such conditions, the availability of SWP or CVP water for agricultural and domestic consumption in much of the Bay Area and Central and Southern California would be severely curtailed, with associated potential catastrophic health effects, economic losses, and lifestyle changes (e.g., water shortages, rationing) affecting millions of people. Even in a scenario in which water supplies to the SWP are maintained at reduced levels, the effects would likely be pronounced.

By adding redundancy to the Delta's water conveyance infrastructure through additional points of diversion in the North Delta, the project minimizes the risks associated with seismic threats to the

current Delta water infrastructure and prevents or mitigates potentially significant economic losses to the state.

Since 1980, 27 Delta islands have been partially or completely flooded, including a "sunny-day failure" in June 2004 at Upper Jones Tract. The levee gave way unexpectedly without any apparent impetus. When pump-out operations began a month later, approximately 140,000 acre-feet of water covered the 12,000 acres of Upper and Lower Jones Tracts to an average depth of about 12 feet. DWR estimated total costs related to the levee break at about $90 million, including approximately $45 million in direct flood fighting and levee repair costs, and millions more in losses of crops and property. A levee break near Isleton in June 1972 allowed large volumes of brackish water from San Francisco Bay to rush into the Delta, curtailing export operations. Approximately 300,000 acre-feet of fresh water were released from upstream reservoirs to help flush the intruding salt water out of the Delta.

Currently, the State has several programs in place to help manage risk and improve levees in the Delta. Local reclamation districts are responsible for maintaining their levees, but they may be reimbursed for a portion of the costs of their work under the state's Delta Levees Subvention Program established in 1973. The Delta Flood Protection Fund Act of 1988 significantly increased reimbursement opportunities. Another state program, the Delta Levees Special Project program, provides financial assistance to local levee-maintaining agencies for rehabilitation of levees in the Delta. Since the inception of the program, more than $300 million has been provided to local agencies in the Delta for flood control and related habitat projects (California Department of Water Resources 2021b:2). The State of California is also working to manage the risk through emergency response and preparedness. For instance, DWR has stockpiled materials in key Delta locations for emergency repairs and flood fighting activities. DWR is also working with the California Governor's Office of Emergency Services, the USACE, and local agencies to coordinate efforts in planning for emergencies. Additional state programs to reduce risk and enhance the Delta include subsidence control/reversal, beneficial use of dredge material, habitat enhancement, and ongoing levee evaluations.

1.2.3.4 Regulatory Environment

The SWP was planned and constructed with an emphasis on delivering water to support California's developing agricultural economy and urban areas, while also providing benefits relating to flood control, power generation, recreation, and fish and wildlife habitat (California Department of Water Resources 2021c). Starting in 1968, laws, regulations, and policies were enacted to protect, conserve, and restore environmental resources. State Water Board decisions and orders, the biological opinions (BiOps) under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), and other permits, statutes, and regulations largely determine Delta regulatory requirements for water quality, flow, and operations. The State Water Board's Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary (Bay-Delta Plan) and applicable water rights decisions, as well as other regulatory processes, are also important in understanding the operations of the SWP.

These laws, regulations, and regulatory processes play an important role in determining how DWR manages and operates the SWP facilities today. Reservoir releases and Delta exports must be coordinated to ensure that the SWP operates within agreed-upon procedures and in a manner consistent with terms and conditions imposed in its water rights permits and licenses. For example, certain pumping restrictions to protect species in the south Delta can prevent the SWP, at the Clifton

Court Forebay and Banks Pumping Plant facilities, from reliably exporting water when it is available, especially during high flows following storm events.

Since 2003, DWR has been required to prepare Delivery Reliability Reports, now titled Delivery Capability Reports, every 2 years that describe, under a range of hydrologic conditions, the existing overall delivery capability of the SWP facilities and the allocation of that capacity to each SWP contractor. Starting with the *2009 SWP Delivery Reliability Report* (California Department of Water Resources 2009c:iii), reports included revised estimates of reductions to SWP delivery reliability attributable to future climate changes and sea level rise and also to restricted operations to comply with the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) BiOps (reductions resulting from prior legislative and regulatory actions already were accounted for in the 2003 and subsequent reports). The 2009 report also discusses the risk of conveyance disruption from Delta levee failure. The 2009 report showed a continuing decrease in the ability of the SWP to deliver water and concluded that for current conditions, a substantial factor for these reductions is the restrictive operational requirements contained in the federal BiOps. For future conditions, these requirements and the forecasted effects of drought and climate change are the dominant factors affecting water supply reliability (California Department of Water Resources 2009c:1). The *2007 SWP Delivery Reliability Report* incorporated the interim, and less restrictive, operation rules established by the U.S. District Court in 2007. As discussed in the 2009 report, the median value estimated for the primary component of SWP Table A annual deliveries for Current Conditions in the 2005 report was 3,170 thousand acre-feet (TAF). As a result of different modeling assumptions to represent changes in the regulations controlling the operations of the SWP, the median value in the 2007 report was reduced to 2,980 TAF, and in the 2009 report, it was further reduced to 2,680 TAF. This is an overall reduction of almost 500,000 acre-feet and represents a 6% reduction between 2005 and 2007 and a 15% reduction between 2005 and 2009. The *2019 SWP Delivery Capability Report* indicates that many of the same specific challenges to SWP operations described in the 2009 report remain in 2019. Average annual exports and deliveries were relatively stable through 2017 before decreasing again to an average of 2,414 TAF/year in the 2019 report. The summary section of the 2019 report concludes by saying, "SWP Delta exports have decreased since 2005, although the bulk of the change occurred between 2005 and 2009 and in 2019. The former reduction is due to the Delta regulations, which constrained exports, culminating in the federal BiOps that went into effect in 2008–2009, restricting operations of the CVP and SWP diversion pumps. The later reduction is primarily due to the amended COA [1986 Agreement Between the United States of America and the State of California for Coordinated Operation of the Central Valley Project and State Water Project (Coordinated Operating Agreement)], with accompanying project operation changes which reduced SWP exports and increased CVP exports, and to a more conservative operation by the SWP of Lake Oroville" (California Department of Water Resources 2020:3).

In 2013, the Water and Power Policy Group commissioned an analysis of water supply impacts of the State Water Board's D-1641 and the 2008 and 2009 BiOps on Delta exports titled *Retrospective Analysis of Changed Central Valley Project and State Water Project Conditions Due to Changes in Delta Regulations* (Retrospective Analysis) (MBK Engineers & HDR 2013).[2] The purpose of the Retrospective Analysis was to determine how changes in regulations governing SWP/CVP Delta operations, including the standards contained in D-1641 and the 2008 and 2009 BiOps have affected

[2] The Water and Power Policy Group consists of the State and Federal Contractors Water Agency, San Joaquin River Group, Western Area Power Authority, Pacific Gas and Electric Company, Sacramento Municipal Utility District, Redding Electric Utility, Association of California Water Agencies, Placer County Water Agency, Northern California Power Agency, California Municipal Utilities Association, and Yuba County Water Agency.

Delta export reliability. To perform the Retrospective Analysis, three modeling scenarios were developed and compared to demonstrate changes to the system. The first scenario contained Delta regulatory requirements of the existing 2008 and 2009 BiOps together with those of D-1641. The second scenario was Delta regulatory requirements of D-1641 by itself. The third scenario looked at the Delta regulatory requirements of the 1978 Water Right Decision- 1485. The CalSim II model was used to assess changes in CVP and SWP storage, river flows, water deliveries, and Delta conditions under each of the three regulatory scenarios. The Retrospective Analysis showed that on average, D-1641 has resulted in approximately 300,000 acre-feet per year of additional Delta outflow relative to D-1485, and the BiOps have resulted in approximately 1 MAF per year of additional Delta outflow over the levels required in D-1641. This results in a total water supply loss on average of about 1.3 MAF from D-1485 levels. Depending on hydrologic year type, the total water supply loss is between 1 MAF and 1.5 MAF. The analysis also showed an increasing reliance on water stored in upstream reservoirs to satisfy Delta flow requirements. For both the SWP and the CVP, D-1641 and the 2008 and 2009 BiOps resulted in reduced opportunities to capture unregulated flows into the Delta,[3] and increasing reliance on upstream storage to satisfy both environmental requirements and water supply needs. In addition, the increased Delta flow requirements imposed by D-1641 and the 2008 and 2009 BiOps further constrained CVP and SWP operations, resulting in decreased operational flexibility and increased vulnerability to adverse dry year conditions because of reduced carryover storage. DWR's Delivery Reliability Reports and Delivery Capability Reports show a decline in reliability of SWP south-of-Delta exports as the reasonable and prudent alternatives in the 2008–2009 BiOps were implemented.

The Sustainable Groundwater Management Act of 2014 imposes constraints and regulations that could decrease the use of groundwater and increase the need for reliable SWP surface water supplies over time.

A 2015 report by the Congressional Research Service concluded that existing regulatory restrictions, combined with hydrologic conditions, contribute to reductions in pumping from the Delta at both the CVP and SWP pumping plants and to significant reductions in south-of-Delta water deliveries for some users (Congressional Research Service 2015:28). For example, combined CVP and SWP Delta exports in the 2014 water year are estimated to have been 1.86 MAF (or 38% of total average annual exports of 4.84 MAF from 1976–2014), the lowest combined export recorded during that 38-year time period. DWR estimates that SWP exports were reduced by approximately 47,000 acre-feet (0.047 MAF) over 29 days due to ESA restrictions in 2014 alone (Congressional Research Service 2015:29).

Reclamation and DWR reinitiated consultation with USFWS and NMFS on the 2008–2009 BiOps that addressed the coordinated long-term operation of the CVP and the SWP in 2016. This process, sometime referred to as Reinitiation of Consultation on Long-Term Operations or "ROC on LTO", eventually concluded with Reclamation completing a Record of Decision (ROD) on the NEPA documentation for the proposed changes in operation of the CVP in 2020 after USFWS and NMFS issued BiOps on those proposed changes in 2019. The 2019 BiOps and NEPA document are currently undergoing legal challenges.

[3] *Unregulated flows* are flows that enter the Delta from runoff below CVP and SWP upstream reservoirs. Under certain conditions when it is determined that releases from upstream reservoirs plus unregulated flow exceed Sacramento Valley in-basin uses plus CVP/SWP exports, DWR and Reclamation have the opportunity to divert additional water provided there is capacity and regulatory constraints do not operate to reduce diversions.

Very early in the term of the Biden Administration, many decisions made by the previous administration were reviewed and subsequent direction was provided to federal lead agencies regarding how those previous decisions should be treated. As a result of the review, Reclamation, DWR, USFWS, and NMFS have reinitiated consultation on the 2019 BiOps on the coordinated long-term operation of the CVP and SWP. It is not known how long this consultation process will last and for purposes of this Draft EIR, DWR has assumed the terms and conditions of the 2019 BiOps remain in place because they represent part of the existing conditions at the time DWR issued the Notice of Preparation (NOP) for this Draft EIR.

In March 2020, DWR secured an ITP from CDFW under CESA for the long-term operation of the SWP. The ITP "project area" is composed of the Sacramento River from the confluence with the Feather River downstream to the legal Delta boundary, the Delta, and Suisun Marsh and Bay. The ITP is currently undergoing legal challenges by parties disagreeing with its operational provisions. However, for purposes of this Draft EIR, DWR has assumed the terms and conditions of the 2020 ITP remain in place.

1.2.4 Prior Delta Conveyance Planning Efforts

Numerous efforts have been made to address the water supply, climate change, seismic risk, and regulatory challenges to the Delta, as well as to improve the existing conveyance facilities. The following sections describe several major efforts.

1.2.4.1 Consideration of a Peripheral Canal

Even while the SWP was being planned and constructed, concern was voiced that sole reliance on south Delta pumps as the mechanism for sending water south from the Delta could ultimately prove to be problematic.

Even before construction of the SWP and CVP pumping plants in the south Delta, the Delta was characterized by high salinity, especially in late summer and fall months or during drought periods (Water Education Foundation 2021). While the use of the Delta Cross Channel improved water quality in the central and south Delta during some periods, many studies were undertaken to evaluate a wide range of alternatives to improve the quality of the water conveyed from Northern California to other areas of California through the Delta.

In the early 1960s, an Interagency Delta Committee was convened to coordinate water resources planning for the SWP, CVP, and local agencies (Price 1965). In 1963, this Interagency Delta Committee evaluated alternatives to protect Delta water quality and water supplies, maintain flood protection, control drainage and seepage in the Delta, maintain Delta navigation, maintain Delta recreation, protect fish and wildlife, and maintain vehicular transportation (Interagency Delta Committee 1963:3–5). The study considered hydraulic and physical barriers, Delta waterway control, and a peripheral canal. The peripheral canal would have been constructed along the eastern edge of the Delta from the vicinity of Walnut Grove on the Sacramento River to Stockton and continue to Italian Slough near the Clifton Court Tract (Interagency Delta Committee 1963:6–29). The 1963 Interagency Delta Committee report suggested that the construction of "overland canals," combined with other structures, could help to address some of the issues in the Delta and concluded that a peripheral canal would allow balanced growth of Delta-oriented activities and recommended that further study be completed (Interagency Delta Committee 1963:34–35).

A 1965 DWR study defined the peripheral canal alignment along the eastern edge of the Delta starting at Hood on the Sacramento River with siphons beneath the Mokelumne, San Joaquin, and Old Rivers and connecting canals to the SWP and CVP pumping plants (California Department of Water Resources 1965:iii). The numerous subsequent studies and proposed plans ultimately resulted in DWR issuing Project Order No. 12 in 1966, adopting the Peripheral Canal as a SWP Delta facility (California Department of Water Resources 1981:163). The Peripheral Canal would have permanently affected approximately 5,800 acres of agricultural land in the eastern Delta, plus land used for disposal of dirt and material during construction. In the 1970s, construction of Interstate 5 involved some initial excavation of borrow pits along the potential Peripheral Canal alignment (California Department of Water Resources 1974a:42).

DWR's 1974 Draft EIR (California Department of Water Resources 1974b:14) for the proposed Peripheral Canal Project described an isolated facility to convey fresh water from the Sacramento River to the south Delta pumping plants with up to 12 release facilities to distribute water from the canal into Delta channels. The canal was planned to initially operate by gravity with the addition of a pumping plant within 10 years following construction. Other purposes of the Peripheral Canal Project were to convey flood flows from Morrison Creek in Sacramento County and Middle River in San Joaquin County into the Peripheral Canal and to incorporate recreational facilities into the project. The recommended alignment would have diverted water from the Sacramento River near Hood for conveyance to Clifton Court Forebay in the south Delta.

The Peripheral Canal proposal included a fully isolated facility removed from Delta channels. It would have included 43 miles of open channel, with an average water surface width of about 500 feet and an average center depth of 30 feet with earthen embankments on both sides. The canal would have required an approximately 1,000-foot-wide right-of-way and a total carrying capacity of 23,300 cubic feet per second (cfs) with 12 facilities along the canal to provide water releases into various Delta channels to meet water quality objectives. The new conveyance facility would have been operated to transport up to 9 MAF of water per year at full development. The proposed Peripheral Canal also would have included one fish screen to keep salmon and striped bass out of the canal and would have permanently affected approximately 5,800 acres of agricultural land in the eastern Delta, not including land that would have been affected by disposal of dirt and other materials during construction. In 1982, in a statewide ballot initiative and veto referendum election, the voters of California rejected the act that would have implemented the Peripheral Canal facilities (Ballotpedia 2022:1). Since that time, a Delta transfer facility has continued to be studied and proposed as part of the SWP and CVP, as described in the following sections.

1.2.4.2 The CALFED Process to Develop a Bay-Delta Plan

In 1995, state and federal agencies, including DWR, Reclamation, USFWS, and NMFS, signed a Framework Agreement to establish a joint state/federal CALFED Bay-Delta Program (CALFED) to prepare a comprehensive plan to address resource problems of the Delta (Congressional Research Service 2005:7). Through a six-step process, the CALFED agencies completed a Phase I report to define problems in the Delta, identify actions to address the problems, evaluate a comprehensive set of alternatives, and develop a plan. In the fall of 1995, CALFED identified four main problem areas in the Delta (ecosystem quality, water quality, water supply, and levee system vulnerability) (CALFED Bay-Delta Program 2000:7), developed objectives for addressing those problems, and agreed upon solution principles to provide policy guidance on developing alternatives (CALFED Bay-Delta Program 2000:9).

Based on these objectives, CALFED agencies publicly conducted a lengthy, multi-phased evaluation of potential alternatives in a far-reaching effort to develop possible alternatives to achieve their mission. CALFED's scoping process resulted in the identification of nearly 50 categories of potential actions and 100 preliminary solution alternatives (CALFED Bay-Delta Program 2000:11). In early 1996, CALFED identified "action categories" for alternatives and potential "core actions" to be included in any alternative, based upon a consensus among interested parties, as actions critical to a Delta solution. To ensure maximum sensitivity to the policies and positions of the CALFED agencies and groups of interested parties, the program involved technical experts, program staff teams, and the public (CALFED Bay-Delta Program 2000:15) to refine the initial set of potential alternatives to 31, and then down to 20. Further consolidation and refinement led to 10 alternatives, with their various components characterized at modest, moderate, and extensive levels of implementation. The 10 alternatives included Dual Delta Conveyance (with north Delta and south Delta intakes) and Through Delta Conveyance (CALFED Bay-Delta Program 2000:13).

After additional technical analysis and the evaluation of comments received from the public and various agencies, the CALFED collaboration narrowed and reclassified the 10 potential alternatives into three generalized approaches, or alternatives, for conveying water across the Delta. The three alternatives shared a set of common programs to address ecosystem quality, water quality, water use efficiency, and levee system integrity. The three alternatives represented different methods to address water storage and conveyance through or around the Delta (CALFED Bay-Delta Program 2000:25–27).

In March 1998, the CALFED lead agencies released a Draft Program EIS/EIR and a Draft Phase II Report that presented results of an evaluation of 12 conveyance alternatives based upon three broad options (existing system conveyance, modified Through Delta Conveyance, and Dual Delta Conveyance with an isolated facility and north Delta intakes). These documents did not identify a preferred alternative or proposed action. The initial technical analyses indicated that a Dual Delta Conveyance would provide the most water quality improvements (primarily related to salinity in the south Delta); however, comments from the public on the draft documents raised many concerns about the location, construction methods, and operations of the Dual Delta Conveyance facilities. Based on this input, the program further refined the alternative solutions, narrowing the number of alternatives to four that were evaluated in the July 2000 Final Programmatic EIR/EIS (CALFED Bay-Delta Program 2000:12).

In August 2000, a broad array of state and federal agencies, including DWR, adopted the CALFED EIS/EIR Programmatic ROD as a 30-year planning roadmap for restoring the Delta's ecology and improving water management. The CALFED ROD states that "Alternative 3—Dual Conveyance Alternative" would provide the greatest technical performance; however, it would present "the most serious challenges in terms of cost, scientific uncertainty, assurances and implementation" (CALFED Bay-Delta Program 2000:27). The CALFED ROD offered the potential for a Dual Conveyance plan in the future following completion of additional studies and environmental review.

In April 2006, CALFED issued a 10-year Action Plan to refocus the program based on new scientific and policy information (CALFED Bay-Delta Program 2006). The scientific information indicated that the current physical configuration of the Delta did not lead to a sustainable condition because of increasing risk of seismic events and sea level rise; and that population levels for Delta pelagic (coastal and oceanic) organisms were at record low levels and appeared to be in ongoing decline. The policy information was informed by independent reviews by the Little Hoover Commission, the California Department of Finance, and CALFED consultants, and the information indicated that there

were concerns regarding long-term financing of programs and governance (CALFED Bay-Delta Program 2006:13). The 10-year Action Plan also indicated that several water users were considering the development of HCPs (CALFED Bay-Delta Program 2006:4). This effort was the initiation of BDCP. The 10-year Action Plan also described the need for a "100-Year Delta Vision" process to become the strategic plan for CALFED. This recommendation led to the State initiating the Delta Vision process.

1.2.4.3 Delta Vision as a Strategic Plan for the Delta

In September 2006, Governor Schwarzenegger signed Executive Order S-17-06, which launched the Delta Vision process by establishing a Blue Ribbon Task Force, a cabinet-level Delta Vision Committee, Delta Science Advisors, and a Stakeholder Coordination Group (Delta Vision Committee 2008:2). A key component of Delta Vision was the governor's appointment of an independent Blue Ribbon Task Force that would be responsible for recommending future actions to achieve a sustainable Delta. The executive order charged the Blue Ribbon Task Force with developing both a long-term vision for a sustainable Delta and a plan to implement that vision. The task force completed its vision for the Delta in January 2008, and its strategic plan in October 2008 (California Natural Resources Agency 2008:iv–vi). The executive order charged the cabinet-level Delta Vision Committee with reviewing the completed work of the task force and making its own implementation recommendations to both the governor and California State Legislature by December 31, 2008. In its October 2008 *Delta Vision Strategic Plan*, the governor's Blue Ribbon Task Force drew the conclusion that California's Delta must be managed according to two coequal goals: (1) restore the Delta ecosystem and (2) create a more reliable water supply for California (California Natural Resources Agency 2008:57). Many of the recommendations made by the Blue Ribbon Task Force in the *Delta Vision Strategic Plan* were later incorporated into the 2009 Comprehensive Water Package.

The *Delta Vision Committee Implementation Report* (Delta Vision Committee 2008:1) concluded that

> [t]he priorities that form the foundation for a sustainable Delta include the following 'fundamental actions':
>
> - A new system of dual water conveyance through and around the Delta to protect municipal, agricultural, environmental, and the other beneficial uses of water;
> - An investment commitment and strategy to restore and sustain a vibrant and diverse Delta ecosystem including the protection and enhancement of agricultural lands that are compatible with [the Blue Ribbon Task Force's Delta Vision Strategic] Plan goals;
> - Additional storage to allow greater system operational flexibility that will benefit water supplies for both humans and the environment and adapt to a changing climate;
> - An investment plan to protect and enhance unique and important characteristics of the Delta region;
> - A comprehensive Delta emergency preparedness strategy and a fully integrated Delta emergency response plan;
> - A plan to significantly improve and provide incentives for water conservation – through both wise use and reuse – in both urban and agricultural sectors throughout the state;
> - Strong incentives for local and regional efforts to make better use of new sources of water such as brackish water cleanup and seawater desalination; and
> - An improved governance system that has reliable funding, clear authority to determine priorities and strong performance measures to ensure accountability to the new governing doctrine of the

Delta: operation for the coequal goals. Completion of this fundamental action is absolutely essential to the sustained operation and maintenance of all of these recommendations.

On February 28, 2008, Governor Schwarzenegger, in a letter to state Senators Perata, Machado, and Steinberg, stated his intention to direct DWR to proceed with preparation of environmental review and permitting activities for a proposed HCP/NCCP to be called the BDCP. The same letter also directed DWR to evaluate at least four alternative Delta conveyance strategies developed in coordination with the BDCP efforts to better protect at-risk fish species (Schwarzenegger 2008). The four conveyance strategies were (1) continued use of existing Delta conveyance without improvements, (2) Dual Conveyance (including an Isolated Conveyance facility to convey water from the Sacramento River to the south Delta in conjunction with continued use of existing Delta conveyance, as suggested by the Delta Vision process), (3) Isolated Conveyance (to convey water from the Sacramento River to the south Delta without continued use of the existing Delta conveyance), and (4) Through Delta Conveyance with substantial improvements and protections of the existing facilities ("armoring the Delta" or "Through Delta" plan).

1.2.4.4 The Bay Delta Conservation Plan and California WaterFix

Participants in the Delta Vision process concluded that there was an urgent need, for both environmental and economic reasons, to improve and modernize the existing SWP/CVP conveyance system in the Delta, which was designed and built long before the advent of many current environmental laws, including the ESA, Clean Water Act (CWA), NEPA, and CEQA. To address some of the Delta ecological problems, the *Delta Vision Strategic Plan* recommended construction and use of new north Delta intake structures with state-of-the-art fish screens to convey water, isolated from the Delta, to the SWP and CVP pumping plants. With this future vision in mind, DWR and several state and federal water contractors, in coordination with Reclamation, proposed a strategy for restoring ecological functions in the Delta while improving water supply reliability in California (California Natural Resources Agency 2008:v). These agencies' initial approach in 2006 focused on developing a comprehensive HCP for the Delta (the BDCP) that proposed new intakes in the north Delta and conveyance facilities to convey water to existing south Delta facilities as one of many conservation measures in a large-scale, long-term habitat restoration program within a Delta plan area.

In November 2009, during early development of the BDCP, the California State Legislature adopted the Sacramento–San Joaquin Delta Reform Act of 2009 (Senate Bill [SB] X7-1 (Simitian)) (Delta Reform Act) and related legislation (SB X7-2 (Cogdill) Water/Ecosystem Bonds; SBX7-6 (Steinberg) Groundwater Elevation Monitoring; SBX7-7 (Steinberg) Water Conservation; SB X7-8 (Steinberg) Water Rights Enforcement). Through these bills, the legislature passed a wide-ranging water package aimed primarily at addressing the state's aging water infrastructure, future water supply issues throughout California regions, and environmental conditions in the Sacramento–San Joaquin Delta. The bill package set up mechanisms by which future decisions about water supply and allocation could be balanced with ecological concerns.

In the Delta Reform Act, the legislature recognized that the Delta ecosystem is in decline, which has reduced the reliability of critical statewide water supplies exported from the Delta to more than two-thirds of Californians and more than 2 million acres of agricultural land (Wat. Code §§ 85001, 85002, 85004). The legislature established the DSC as an independent state agency and tasked it with adopting an enforceable Delta Plan to further the coequal goals (Wat. Code §§ 85200, 85300(a)). The Delta Reform Act includes achieving reliable water supplies exported from the Delta

for California as one of the state's coequal goals for the Delta (Pub. Resources Code § 29702(a) and Wat. Code §§ 85001(c), 85054). The Delta Reform Act directed the DSC to include in the Delta Plan "measures to promote a more reliable water supply that address all of the following: (1) meeting the needs for reasonable and beneficial uses of water, (2) sustaining the economic vitality of the state, and (3) Improving water quality to protect human health and the environment" (Wat. Code § 85302(d)). The legislature also determined that new and improved Delta water conveyance facilities are an indispensable part of a comprehensive strategy to address the dual crisis of Delta ecosystem decline and Delta water supply infrastructure. "Providing a more reliable water supply for the state involves implementation of water use efficiency and conservation projects, wastewater reclamation projects, desalinization, and new and improved infrastructure, including water storage and Delta conveyance facilities" (Wat. Code §§ 85004(b)). It further determined that improving the water conveyance system in the Delta and expanding water storage are inherent in the coequal goals (Wat. Code § 85020(f)). When the legislature enacted the Delta Reform Act, the BDCP planning process was far enough along that the legislature provided that if it met certain criteria, the DSC would be required to incorporate it into the *Delta Plan* itself (Wat. Code § 85320). As discussed below, the California WaterFix, which followed the BDCP planning process, was developed in response to the need to secure reliable Delta exports to support California's economy and people, to reduce environmental conflicts and improve conditions for native fish, and address seismic and other risks to Delta levees and salinity intrusion from sea level rise.

The BDCP would have achieved compliance with the ESA through an HCP submitted for approval by both USFWS and NMFS under Section 10 of the ESA, and would have achieved compliance with state endangered species laws through an NCCP submitted for approval by CDFW under the California Natural Community Conservation Planning Act. The HCP/NCCP included 21 Conservation Measures, including new Delta conveyance as Conservation Measure 1 (California Department of Water Resources and Bureau of Reclamation 2016:1-5). The BDCP would have restored over 80,000 acres of natural communities, including tidal natural communities, seasonally inundated floodplains, and adjacent transition uplands; enhanced 20 miles of channel margin; and enhanced seasonally inundated floodplain in the Yolo Bypass through operation of a modified Fremont Weir. These actions would have substantially increased the extent and quality of physical habitat available for covered fish and terrestrial species. Conservation Measure 1 included three screened intakes on the Sacramento River, two main tunnels connecting them to an expanded Clifton Court Forebay in the south Delta, and an intermediate forebay, and it had a maximum capacity of 9,000 cfs. The BDCP was developed to provide incidental take authorization for covered species, including those listed under the ESA and CESA, for a period of 50 years, with the extensive habitat restoration completed by year 40. Reclamation, as a federal agency, was not an applicant under Section 10 of the ESA; instead, its role as a federal agency in implementing elements of the BDCP would have achieved separate ESA compliance through Section 7 of that act.

After publishing the Draft BDCP and Draft EIR/EIS, based on the HCP/NCCP approach in December 2013, and after reviewing public and fish and wildlife agency comments on that document, and considering wildlife agency concerns about issuing 50-year permits in light of their uncertainty about the effects of climate change and the effectiveness of habitat restoration, Governor Brown announced two new initiatives: the California WaterFix to address water supply reliability from the Delta, and California EcoRestore to address habitat restoration objectives, each proceeding independently of the other but in parallel (Southern California Water Committee 2015). In response, the lead agencies decided to consider additional alternatives to the BDCP that included conveyance components but did not include conservation components related to an HCP or NCCP. Many of those

conservation components were absorbed into the EcoRestore program, launched as a multi-agency initiative in 2015 and still ongoing. DWR is the lead partner on the majority of habitat restoration projects to support the long-term health of the Delta and its native fish and wildlife species (California Department of Water Resources 2022b).

With the issuance of the Partially Recirculated Draft EIR/Supplemental Draft EIS (RDEIR/SDEIS) in July 2015, the lead agencies released a revised environmental analysis for the California WaterFix, which included three new screened intakes in the north Delta along the Sacramento River and two tunnels with an intermediate forebay to convey water from the north Delta intakes to existing SWP and CVP facilities in the south Delta. California WaterFix, like BDCP Conservation Measure 1, had a maximum capacity of 9,000 cfs. California WaterFix included habitat restoration focused on reducing the effects of constructing and operating conveyance facilities on listed fish and wildlife species to comply with CEQA and other regulatory requirements.

The California WaterFix, and BDCP before it, were designed to address threats to the Delta that were previously not well understood, and to account for changed circumstances, new scientific information, and a much more sophisticated and stringent environmental regulatory framework. In contrast, water managers in decades past had limited information about the effects of climate change (e.g., snowpack reduction and sea level rise), subsidence, and seismic risks on water supply reliability.

The California WaterFix proposed to convey water from three new fish-screened intakes on the Sacramento River underground through two 35-mile-long tunnels to a modified Clifton Court Forebay or new forebay and pump station at that location. These conveyance facilities would have created a much smaller permanent surface footprint than the Peripheral Canal or any of the BDCP alternatives that included canals instead of tunnels.

The California WaterFix would have been able to divert and convey no more than a maximum of 9,000 cfs, with the resulting dual-conveyance system diverting a long-term average yearly total of between 4.7 and 5.6 MAF, depending on hydrology and other factors, including regulatory constraints. The California WaterFix would have used state-of-the-art fish screens on the new north Delta intakes that would have met CDFW, NMFS, and USFWS standards. Under certain conditions, water would have been conveyed through the tunnels entirely by gravity, instead of by pumps. The frequency of gravity flow would have been determined during the design phase based on the operations of the intakes and operations of the existing SWP pumping plants. California WaterFix would have maintained existing capability for through-Delta operations, allowing for greater operational flexibility. The California WaterFix included specific operational objectives related to Old River and Middle River flows, Head of Old River gate operations, Delta outflow, and north Delta bypass flows to meet both water quality and ESA and CESA regulatory requirements.

In July 2017, DWR approved the California WaterFix and continued to pursue regulatory authorizations required to implement the project. By 2018, various SWP contractor agencies had approved the funding needed for implementation. In February 2019, at his first State of the State address, Governor Gavin Newsom announced that he did not “support WaterFix as currently configured” but does “support a single tunnel.” In light of Governor Newsom’s announcement and Executive Order N-10-19 (discussed further below), DWR exercised its discretion to withdraw certification of the BDCP/California WaterFix EIR, rescinded the California WaterFix project approval and bond resolutions, and withdrew permit applications to begin a new project planning process.

1.3 Current Planning Effort

On April 29, 2019, Governor Newsom signed Executive Order N-10-19 directing the California Natural Resources Agency, California Environmental Protection Agency, and California Department of Food and Agriculture to develop a comprehensive strategy to build a climate-resilient water system and ensure healthy waterways through the twenty-first century. After a public input period, Governor Newsom released the *California Water Resilience Portfolio* on July 28, 2020. The *Water Resilience Portfolio* identifies a suite of complementary actions to ensure safe and resilient water supplies, flood protection and healthy waterways for the state's communities, economy, and environment. One of the projects identified in the portfolio is new diversion and conveyance facilities in the Delta to safeguard the SWP, which is now proposed as the Delta Conveyance Project.

DWR as the owner and operator of the SWP, is proposing to design and construct two diversion facilities, each at 3,000 cfs capacity, on the Sacramento River, a single tunnel for conveyance, tunnel shafts, and a pumping plant and appurtenant facilities through which water would be discharged directly to the Bethany Reservoir along the California Aqueduct. DWR is the lead agency responsible for preparing this Draft EIR and complying with CEQA. DWR will consider this Draft EIR, as well as agency and public comments and, as appropriate, responses to those comments and any changes to this Draft EIR that may be necessary, in its decision process for certifying the Final EIR and determining whether to approve the project or an alternative. USACE, as the regulatory agency with jurisdiction over aspects of the project under federal law (the CWA and Rivers and Harbors Act), is the federal lead agency responsible for preparing a separate EIS in compliance with NEPA and applicable regulations. The Draft EIS is expected to analyze DWR's proposed action and appropriate alternatives consistent with USACE's review authorities.

Because the proposed action would alter federal levees and cross under a federal navigation project, permission from USACE is required under Section 14 of the Rivers and Harbors Act (33 United States Code [USC] § 408) (now referred to as Section 408).[4] In addition, the proposed work in navigable waters and proposed discharge of dredge or fill material into waters of the United States requires authorization from USACE under Section 10 of the Rivers and Harbors Act (33 USC § 403) and Section 404 of the CWA (33 USC § 1344). DWR is the *requester* under Section 408 and the *applicant* under Sections 10 and 404. The Requester's/Applicant's Preferred Alternative would require permission from USACE pursuant to Section 408 and Section 10 and Section 404 permit approvals prior to project implementation. USACE will consider the Draft EIS as well as agency and public comments and, as appropriate, responses to those comments and any changes to the Draft EIS that may be necessary, in its decision to issue the Final EIS and ROD on the project.

The Delta Conveyance Design and Construction Authority (DCA) is a joint powers authority, previously formed by several public water agencies to implement California WaterFix. The joint powers authority agreement signed in May 2018 established the role of DCA to provide a flexible means of designing, contracting, constructing, and financing the project (if approved) in a safe, timely, and cost-efficient manner to assist DWR and the public water agencies that would be financing it (Delta Conveyance Design and Construction Authority 2018). DCA is governed by a seven-member board that is composed of representatives from the participating SWP-served public water agencies and that formed the joint powers authority. DWR has directed DCA to develop

[4] This requirement was established in Section 14 of the Rivers and Harbors Act of 1899, which has since been amended several times and is codified at 33 USC Section 408 (Section 408) (U.S. Army Corps of Engineers 2021).

preliminary design concepts for the project facilities and alternatives to be analyzed in this Draft EIR, with a focus on ways to reduce or avoid construction-related effects and other impacts on Delta communities and the environment.

1.4 Project Area and Study Areas

The study area for the actions evaluated in this Draft EIR is larger than the project facility footprint in and around the Delta because some of the effects of constructing and operating the project could extend beyond the physical project boundaries. The study area varies and is specifically defined for each resource (refer to Chapters 5–32 for definitions of the study area particular to each resource topic).

Depending on the resource, the study area may include portions of the following geographic regions, as shown in Figure 1-4.

- Upstream of the Delta region[5]
- Delta region
- South-of-Delta/SWP and CVP service areas
- Project area

1.4.1 Upstream of the Delta Region

The upstream of the Delta region study area comprises those areas in the SWP and CVP system that are upstream of the Delta. It is shown in Figures 1-5 through 1-8.

1.4.2 Delta Region

The Sacramento–San Joaquin Delta is composed of two areas recognized under California law, collectively called the "statutory Delta." The Primary Zone is the largest area and includes 490,050 acres at the center of the Delta (Pub. Resources Code § 29728). The Secondary Zone includes 247,320 acres surrounding the Primary Zone (Pub. Resources Code § 29731). Suisun Marsh lies west of the Primary Zone, encompassing 106,570 acres (Pub. Resources Code § 29101) of primarily managed wetland, and although it is not part of the legal Delta, it is included as part of the Delta region for purposes of this Draft EIR. These three areas extend over portions of six counties: Alameda, Contra Costa, Sacramento, San Joaquin, Solano, and Yolo. Most of the project area lies within the statutory Delta. The project area includes temporary and permanent construction areas and compensatory mitigation areas. The study area in the Delta region may also include areas outside of the project footprint that may be affected by project construction or project operations, such as waterbodies affected by project operations in both the Primary and Secondary Zones.

[5] Although the proposed project and alternatives do not include any facilities located in or changes to water operations upstream of the Delta, inclusion of these areas is considered in this Draft EIR to evaluate and, as appropriate, rule out any potential for causing direct or reasonably foreseeable indirect impacts in those areas.

1.4.3 SWP Service Areas

DWR has long-term water supply contracts with 29 public entities to provide water from the SWP. Certain public water agencies and DWR have entered into an Agreement in Principle (AIP) for the purpose of amending the SWP water supply contracts. Figure 1-3 illustrates the SWP service areas. The AIP states the possible terms for allocating costs and benefits of the project. The effects of project implementation in these delivery areas are primarily addressed in Chapter 31, *Growth Inducement*.

1.4.4 Project Area

The project area consists of the construction footprint of the project facilities, which include intakes in the north Delta, tunnel shafts, access roads, and park-and-ride lots. Depending on the alternative, there would be either a terminal forebay on Byron Tract or facilities around Bethany Reservoir. Certain facilities that would be constructed under some alternatives would be located outside of the statutory Delta. These areas lie southeast of the Delta. Depending on the alternative, new underground or overhead SCADA (supervisory control and data acquisition) lines, utility lines, access roads, and/or park-and-ride lots could be located in these areas. A detailed discussion of project facilities can be found in Chapter 3, *Description of the Proposed Project and Alternatives,* and in the Engineering Project Reports and technical memoranda (Delta Conveyance Design and Construction Authority 2022a, 2022b).

A text description of this figure is provided in Chapter 39, *Text Descriptions of Figures*

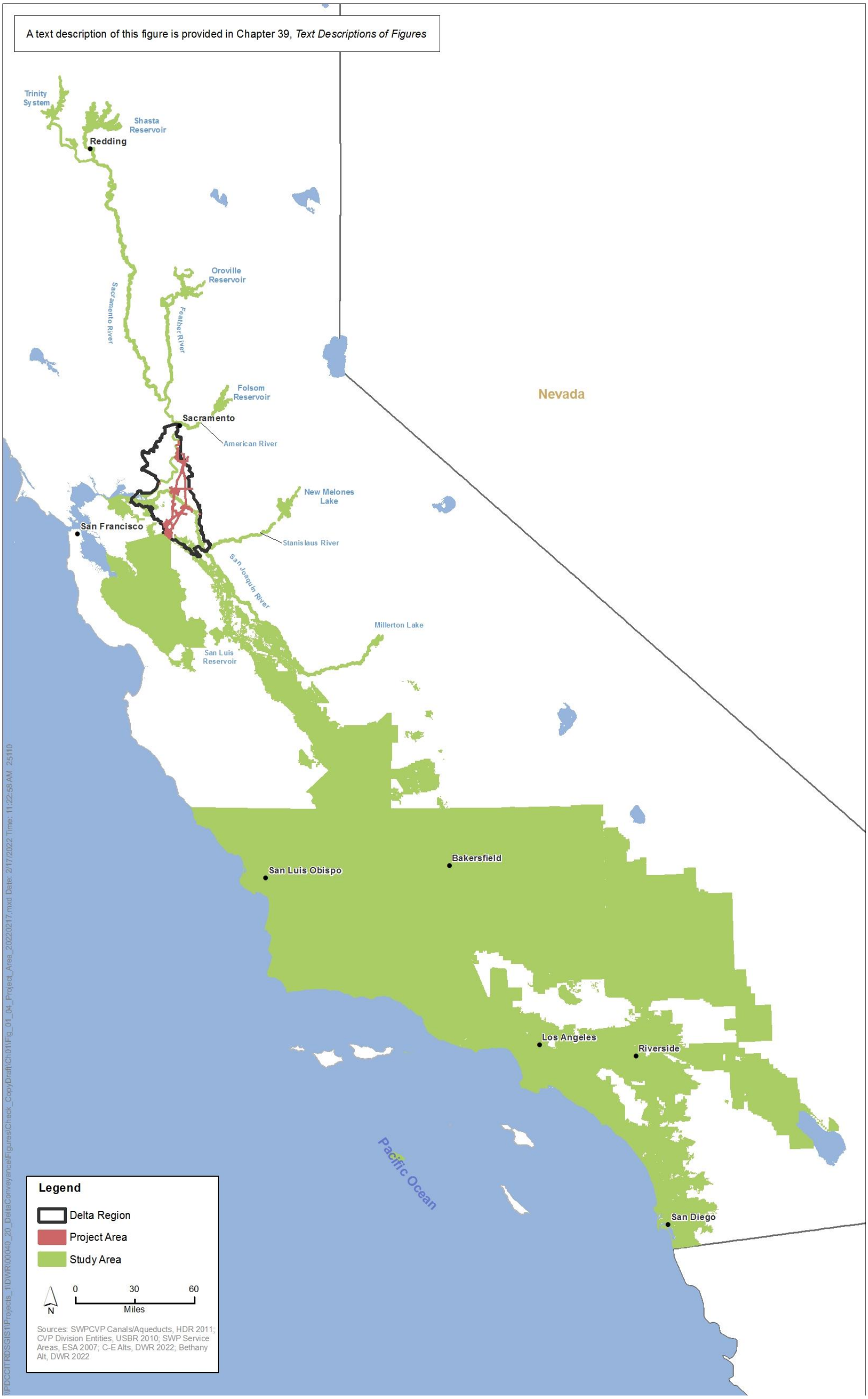

Figure 1-4. Project and Study Areas

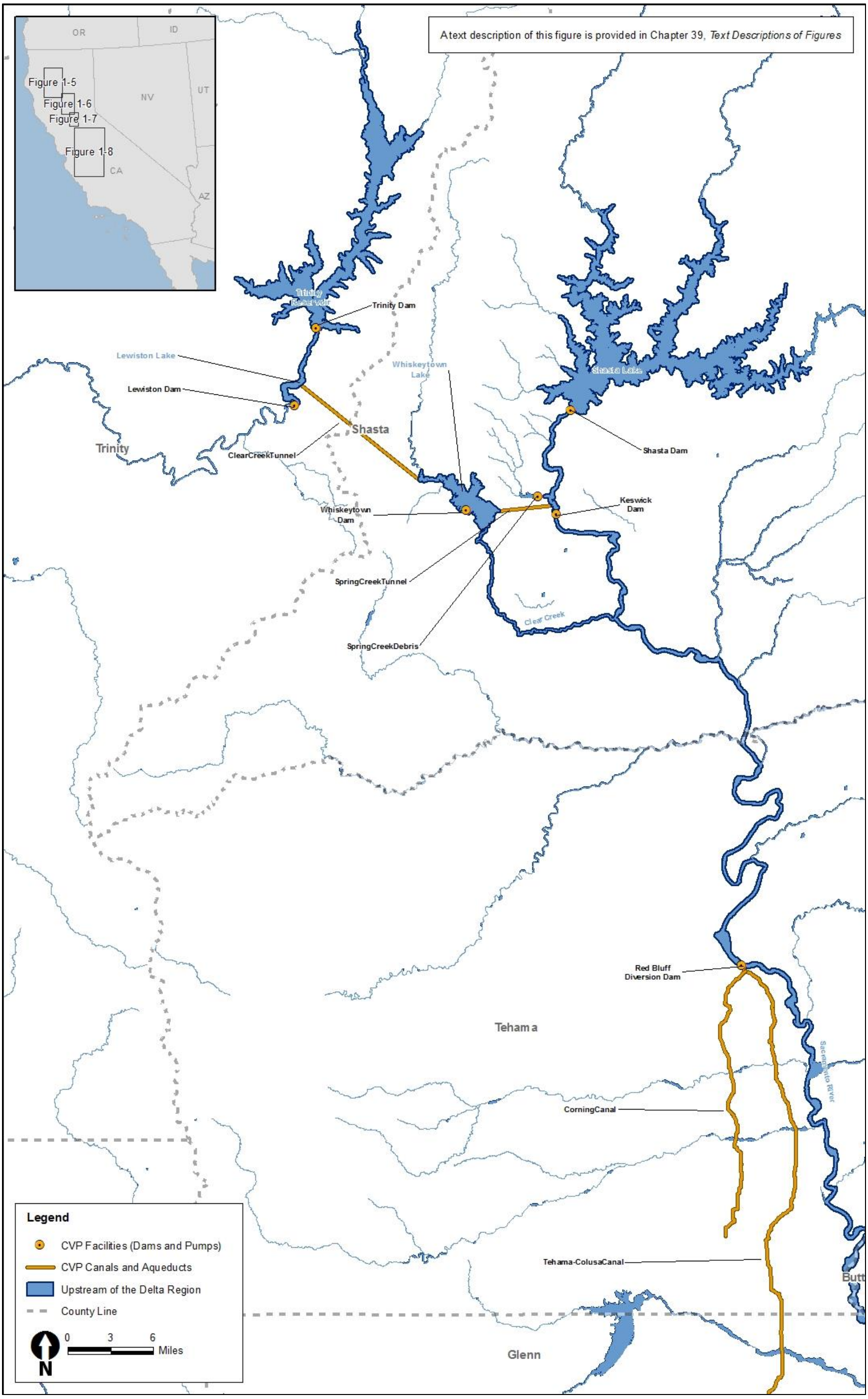

Figure 1-5. Upstream Facilities—Sacramento River and Trinity System (CVP facilities)

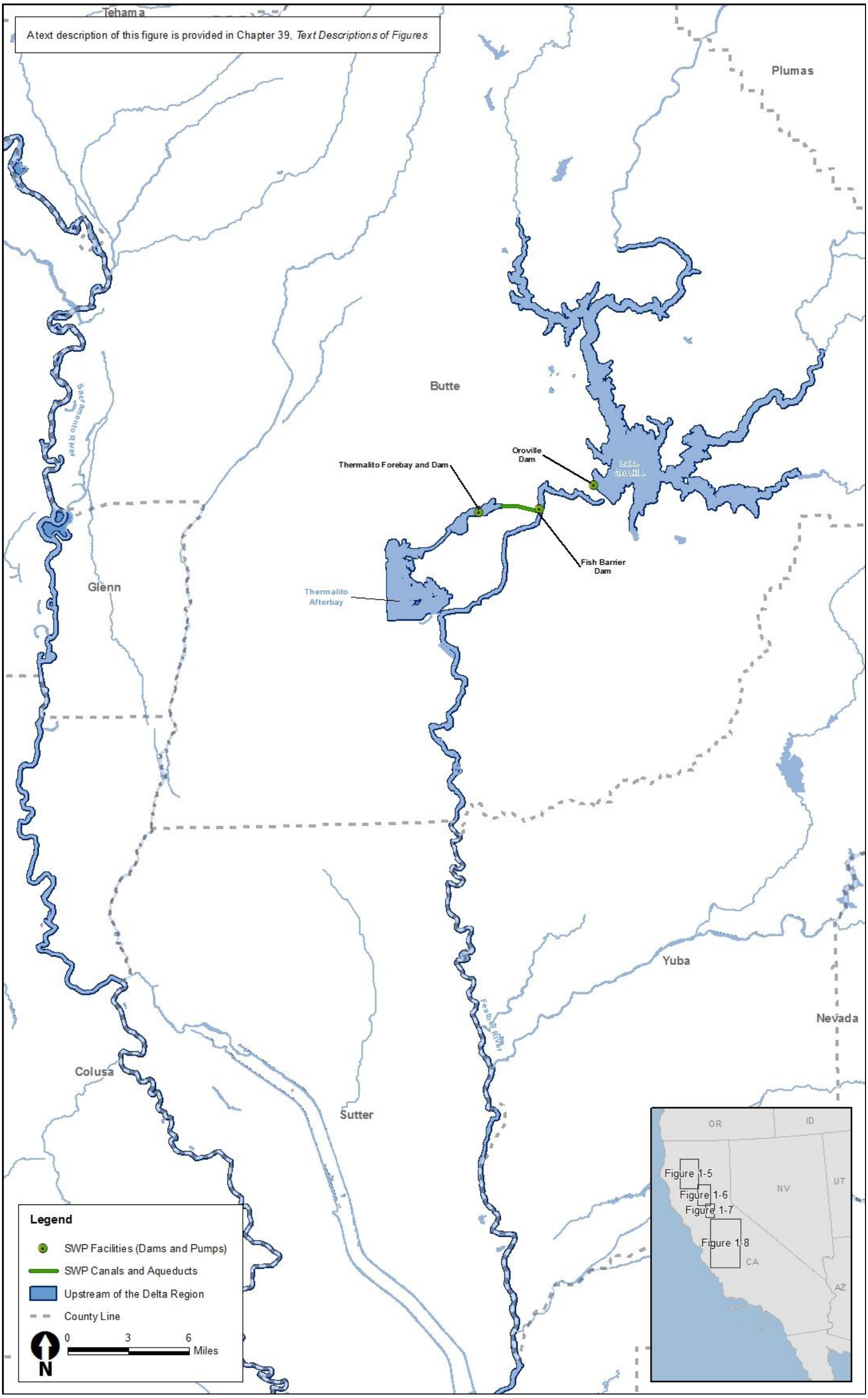

Figure 1-6. Upstream Facilities—Feather River System (SWP facilities)

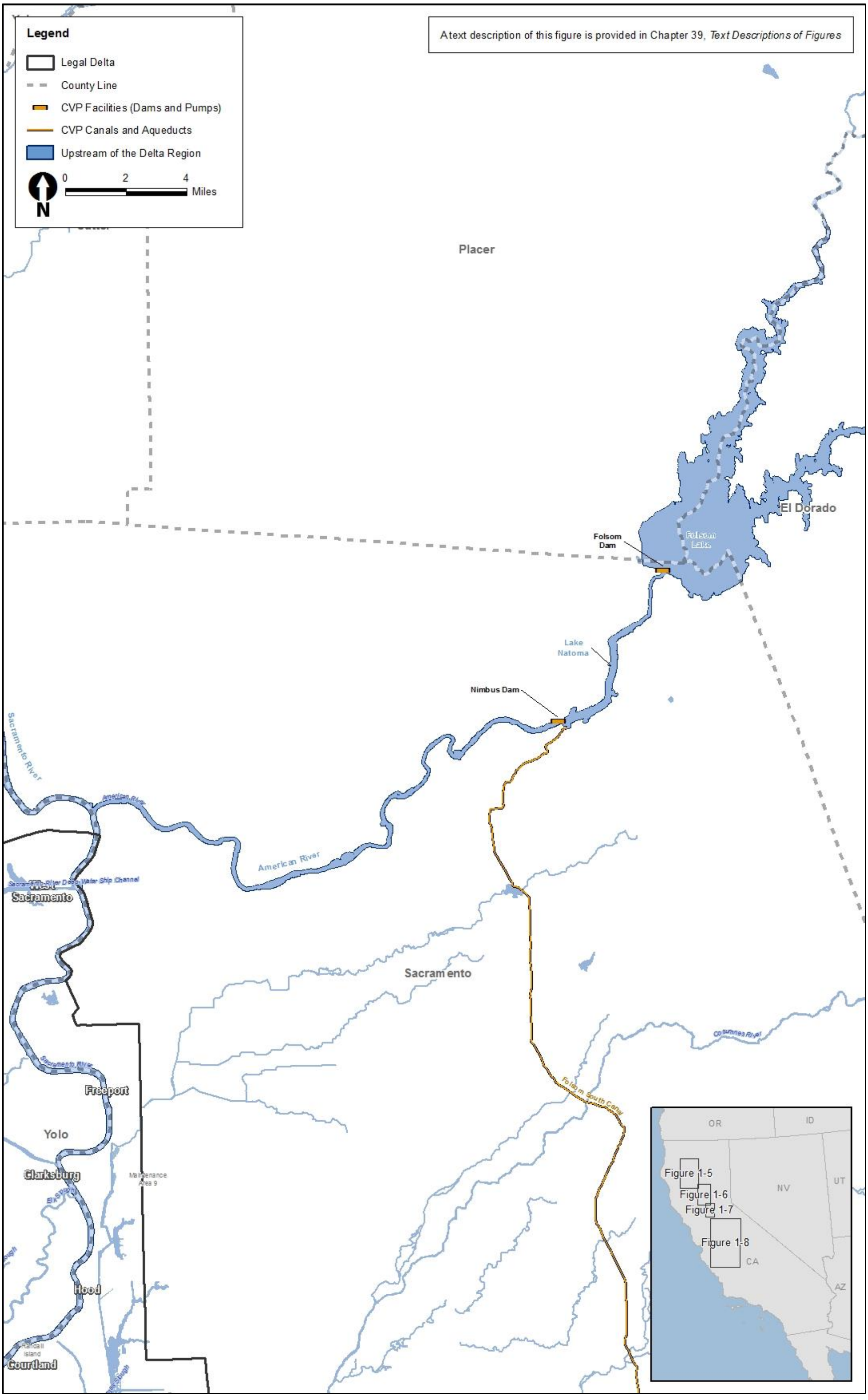

Figure 1-7. Upstream Facilities—American River System (CVP facilities)

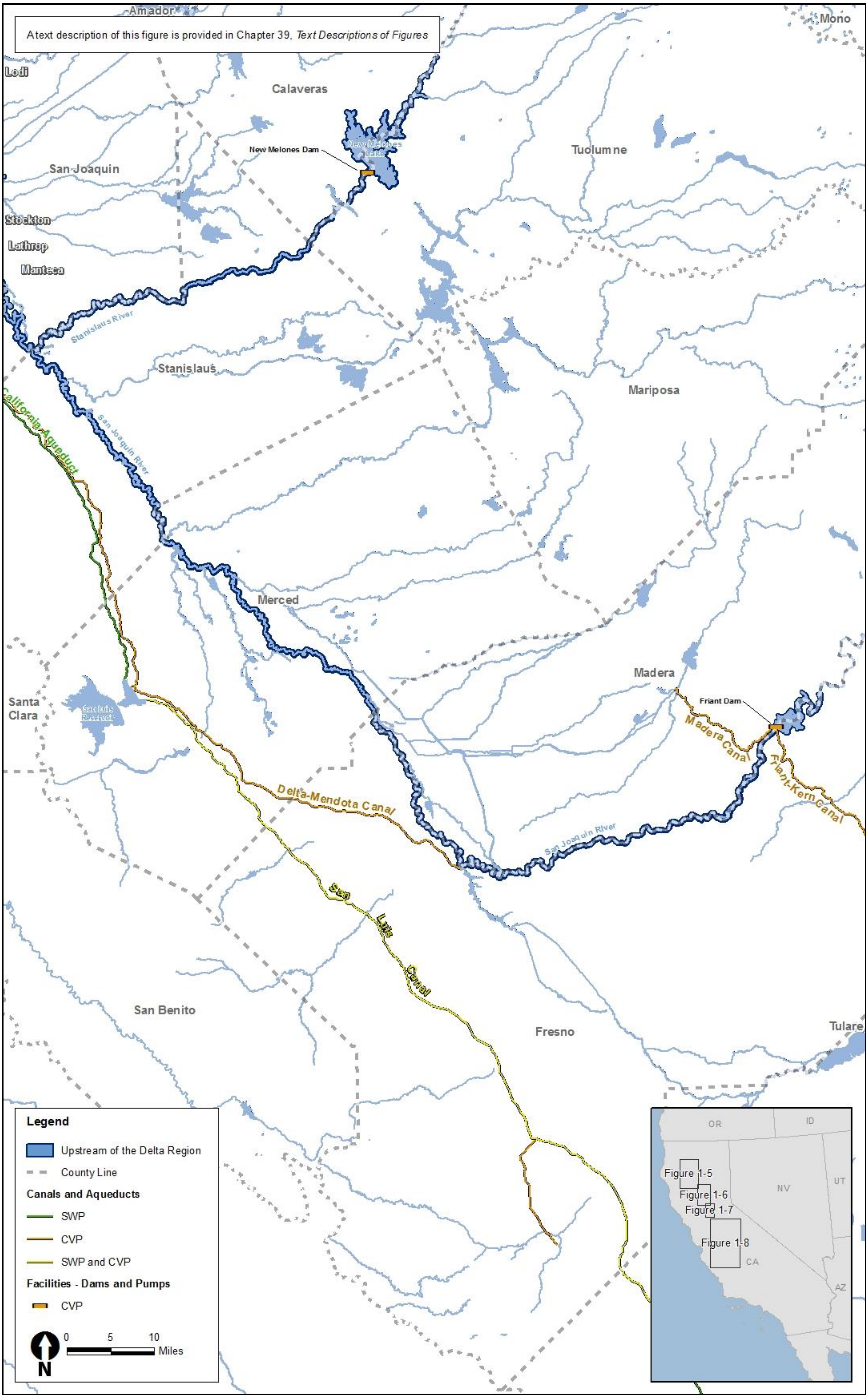

Figure 1-8. Upstream Facilities—San Joaquin and Stanislaus River System (CVP facilities)

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1.5 Intended Uses of this Draft EIR and Agency Roles and Responsibilities

The following sections describe the relevant review, approval, and consultation requirements that may be necessary to implement the project.

1.5.1 Overview of Approval Process

1.5.1.1 Lead Agency

DWR is the CEQA lead agency because it owns and operates the SWP and would be responsible for the design, construction, operation, and maintenance of any new SWP conveyance facilities if DWR approves the proposed project or a project alternative.

1.5.1.2 Public Water Agencies/Project Beneficiaries

Section 85089 of the Delta Reform Act requires that,

> [c]onstruction of a new Delta conveyance facility shall not be initiated until the persons or entities that contract to receive water from the State Water Project and the federal Central Valley Project or a joint powers authority representing those entities have made arrangements or entered into contracts to pay for both of the following: [¶] (a) The costs of the environmental review, planning, design, construction, and mitigation, including mitigation required pursuant to [CEQA], required for the construction, operation, and maintenance of any new Delta water conveyance facility. [¶] (b) Full mitigation of property tax or assessments levied by local governments or special districts for land used in the construction, location, mitigation, or operation of new Delta conveyance facilities.

DWR and the SWP contractors have begun the public process of negotiating a proposed amendment to the SWP water supply contracts to allocate the costs of a new Delta Conveyance facility, including the costs identified in Wat. Code Section 85089. The proposed amendment would allocate the costs and benefits of a project if one is approved and constructed. On March 29, 2021, the negotiators finalized an AIP (California Department of Water Resources and State Water Contractor Public Water Agencies 2021). The AIP and accompanying White Paper are complete except for the table of Public Water Agency Delta Conveyance Facility Allocation Factors (California Department of Water Resources and State Water Contractor Public Water Agencies 2020). The text of the proposed amendment has not been written, nor has any amendment been executed.

Approval of the AIP is not the same as approval of a Delta conveyance-related water supply contract amendment or of a Delta conveyance facility itself. Neither of those approvals can occur until CEQA review is completed. For more information on the AIP, see Chapter 3.

Because the public water agencies would need to approve the water supply contract amendments that would fund the project, if approved, they are considered responsible agencies under CEQA.

1.5.2 Use of this Draft EIR by Other Entities

This Draft EIR is being prepared in compliance with the requirements of CEQA. Before the selection and approval of an alternative is considered, the lead agency must comply with the necessary state

environmental review requirements. This Draft EIR is intended to provide sufficient CEQA support for approval, if appropriate, for the project and related decisions by DWR, project beneficiaries, and responsible agencies. The roles and responsibilities of some of these agencies are summarized below.

Responsible agencies are state or local public agencies other than the CEQA lead agency that have discretionary approval over aspects of the project. In most circumstances, CEQA requires a responsible agency to use the lead agency's CEQA document to support its own decision-making process (CEQA Guidelines § 15096). *Trustee agencies* are state agencies that have jurisdiction by law over natural resources affected by a project that are held in trust for the people of California (CEQA Guidelines § 15386); trustee agencies must be consulted when the lead agency is preparing an EIR with potential project effects on those resources.

Additionally, state or other California public agencies may contribute to and rely on information prepared as part of the environmental compliance process, including the certified EIR and supporting materials. A listing of some of the agencies and their respective potential review and approval responsibilities, in addition to those under CEQA, is provided in Table 1-1.

1.5.2.1 California Department of Fish and Wildlife

CDFW is both a responsible agency and a trustee agency (CEQA Guidelines §§ 15381 and 15386(a)). CDFW has discretionary authorities under various sections of the California Fish & Game Code (Fish & G. Code) and has trustee authorities, with regard to the fish and wildlife of the state, to designated rare or endangered native plants and to game refuges, ecological reserves, and other areas administered by the department.

California Fish and Game Code Section 2081(b)

CDFW administers and enforces CESA, which prohibits the import, export, take, possession, purchase, or sale of species listed by the State as endangered, threatened, or in specific cases, candidate species (Fish & G. Code §§ 2080, 2081.1). *Take* under CESA is defined as any action or attempt "to hunt, pursue, catch, capture, or kill" (Fish & G. Code § 86). As provided by Section 2081(b) of the Fish & G. Code, CDFW may authorize take that is otherwise prohibited by Section 2080 with an ITP. CESA allows CDFW to issue an ITP for a state-listed threatened and endangered species only if specific criteria are met (14 California Code of Regulations [Cal. Code Regs.] § 783.4 (a) and (b)).

The requirements of an application for incidental take under CESA are described in Section 2081 of the Fish & G. Code. Incidental take of endangered, threatened, or candidate species may be authorized if an applicant demonstrates, among other things, that the effects of the proposed take will be minimized and fully mitigated (Fish & G. Code § 2081(b)(2)). DWR will comply with state endangered species laws by obtaining an ITP from CDFW for the project under Section 2081(b) of CESA.

California Fish and Game Code Section 1600 *et seq*.

Section 1602 of the Fish & G. Code requires any person, state, or local government agency to provide advance written notification to CDFW prior to initiating any activity that would do the following.

- Substantially divert or obstruct the natural flow of, or substantially change or use any material from the bed, channel, or bank of any river, stream, or lake.

- Deposit or dispose of debris, waste, or other material into any river, stream, or lake.

Certain actions that would be implemented under the project or project alternatives would trigger the need to provide notice under Section 1602. CDFW will review notifications of actions to determine if the aspects of the project triggering notification would substantially adversely affect existing fish and wildlife resources that are directly dependent on a lake, river, or stream. If CDFW determines that the project may substantially adversely affect an existing fish and wildlife resource, it will require, as part of a Lake and Streambed Alteration Agreement, reasonable measures necessary to protect the fish and wildlife resource (Fish and G. Code § 1603(a)).

1.5.2.2 State Water Resources Control Board

The State Water Board is a responsible agency for the project under CEQA (CEQA Guidelines §§ 15381 and 15386(a)). Under the Porter-Cologne Act (Wat. Code § 13000 *et seq.*), the State Water Board and Regional Water Quality Control Boards regulate activities and factors that may affect the quality of the waters of the state (§ 13050, subd. (i)).

Change in Point of Diversion

DWR holds appropriative water right permits to divert water for the SWP, currently identified at certain diversion points in the Delta within DWR's water right. The water right permits identify these specific points where water may be diverted from the stream system. The locations of the north Delta intake facilities that would be constructed under the project alternatives are not currently identified as points of diversion in DWR's water right. Thus, prior to constructing the project, DWR must file a petition with the State Water Board and receive State Water Board approval to add to the points of diversion in the relevant water right (Wat. Code § 85088.) This discretionary authority and the need for a Section 401 certification (below) make the State Water Board a responsible agency.

The change petition process is described in Chapter 10 of Division 2, Part 2 of the Wat. Code (§§ 1700–1707) and Title 23 of Cal. Code Regs. Article 15 (§§ 791–799).

Section 401 of the Clean Water Act—Water Quality Certification

Pursuant to Section 401 of the federal CWA, any applicant seeking a federal permit or license of an activity that "may result in a discharge into the navigable waters" must also obtain a water quality certification from the state or authorized Tribe with jurisdiction over the project area where a discharge could occur (33 USC § 1341). Prior to issuing authorization under CWA Section 404, USACE must first receive a water quality certification from the state water quality agency indicating that the proposed activity complies with all applicable state water quality standards, limitations, and restrictions. In California, because issuance of a water right authorization is also required, the State Water Board will determine whether to issue the Section 401 certification.

1.5.2.3 Delta Stewardship Council

The DSC was created by the California State Legislature to adopt and implement a *Delta Plan* to provide for the sustainable management of the Delta ecosystem, to provide for a more reliable water supply for the state, and to protect and enhance the quality of water supply from the Delta. Although the DSC has no direct permitting authority over the proposed project or alternatives, DWR will need

to file a consistency determination with the DSC. The DSC is not considered a responsible agency but will use the Draft EIR as described below.

Delta Plan Covered Action Requirements

The Delta Reform Act and DSC regulations require state and local agencies proposing to carry out a project in the Delta or Suisun Marsh that qualify as a "covered action" within the meaning of the Delta Reform Act to submit a certification of consistency with applicable policies included in the *Delta Plan*. If it is infeasible to demonstrate full consistency with any of the applicable *Delta Plan* policies, state or local agencies may demonstrate consistency with the *Delta Plan* by showing overall consistency with the coequal goals. In contrast to how many other governmental plans are implemented, the DSC does not exercise direct review and approval authority over covered actions to determine their consistency with the regulatory policies in the *Delta Plan*. Instead, state or local agencies self-certify *Delta Plan* consistency, and the DSC adjudicates any appeals that allege the covered action is not consistent with one or more of the applicable policies. Because DSC discretionary approval is not required to implement the project, it is not considered a responsible agency for preparation of this Draft EIR. However, if anyone appeals DWR's certification of consistency, DWR will have to prepare an administrative record containing the evidence that it considered when it certifies consistency, and the Draft and Final EIRs will be included in that record.

For a state or local agency to determine whether its proposed plans, programs, or projects are covered actions under the Delta Reform Act and therefore subject to the requirement to submit a certification of consistency with applicable *Delta Plan* policies, it must start with the Delta Reform Act, which defines a covered action as:

> a plan, program, or project as defined pursuant to Section 21065 of the Public Resources Code that meets all of the following conditions:
>
> - Will occur, in whole or in part, within the boundaries of the Delta or Suisun Marsh;
> - Will be carried out, approved, or funded by the state or a local public agency;
> - Is covered by one or more provisions of the Delta Plan;
> - Will have a significant impact on the achievement of one or both of the coequal goals or the implementation of government-sponsored flood control programs to reduce risks to people, property, and state interests in the Delta. (Wat. Code § 85057.5(a))

Pursuant to DSC regulation, the determination of whether a project is a covered action must be reasonable, made in good faith, and consistent with the Delta Reform Act and relevant regulatory policies in the *Delta Plan* (23 Cal. Code Regs. § 5001(j)(3)). If requested, DSC staff will consult with the project proponent prior to certification to assist state and local public agencies in preparing the required certification.

Once a state or local agency has determined that its project is a covered action under the *Delta Plan*, it is required to submit a written certification of consistency to DSC, with detailed findings, demonstrating that the covered action is consistent with the applicable *Delta Plan* policies (Wat. Code § 85225) (Delta Stewardship Council 2013b:1).

For additional information please see, Appendix 3E, *Delta Reform Act Considerations*, which describes how the project would be consistent with the *Delta Plan*.

1.5.2.4 Delta Conveyance Design and Construction Authority

DCA is a responsible agency for the project under CEQA. While DCA does not have approval authority over the entire project, if DWR approves the project, DCA will issue various discretionary approvals needed to implement the project, including approvals (e.g., awarding contracts) relating to further geotechnical and other investigations and, eventually, construction of the project.

Table 1-1. Summary of Potential Agencies and Review, Approval, or Other Responsibilities, in Addition to Those under CEQA

Agency	Permit, Decision, Approval, or Other Action [a]
California Natural Resources Agency	Other Considerations The California Natural Resources Agency promulgates the CEQA Guidelines (14 Cal. Code Regs. § 15000 et seq). CEQA enacted a statewide policy of environmental protection requiring state and local agencies within California to follow a protocol of analysis and public disclosure of potential environmental impacts prior to project approval.
California Department of Water Resources (CEQA lead agency)	Other Considerations Water Code Sections 11100 *et seq*. (Central Valley Project Act) Water Code Sections 12930 *et seq*. (California Resources Development Bond Act) Water Code Section 11451 (Control of Project) Approval of SWP water supply contract amendment and funding agreements
California Department of Fish and Wildlife (CEQA responsible agency, trustee agency)	Permits or Consultations California Endangered Species Act, incidental take permit (Fish & G. Code § 2081(b)) Streambed Alteration Master Agreement (Fish & G. Code § 1602) Scientific Collection permits under Fish & G. Code State wildlife areas Encroachment Permit Davis-Dolwig Act (Wat. Code §§ 11900–11925) consultation Other Considerations Instream flow (Pub. Resources Code § 10005(c)) Water pollution (Fish & G. Code § 5650) Nests and eggs (Fish & G. Code § 3503) Migratory birds (Fish & G. Code § 3513) Non-game birds (Fish & G. Code § 3800) Raptors (Fish & G. Code § 3503.5) Fully protected species (Fish & G. Code §§ 3511, 4700, 5050, 5515)
State Water Resources Control Board (CEQA responsible agency)	Permits or Consultations Section 401 Water Quality Certification and Waste Discharge Requirements, Porter-Cologne Act (Wat. Code § 13000 *et seq*.) Water Right Change Petition (including Change in Point of Diversion) Clean Water Act Section 402 National Pollutant Discharge Elimination System Permit Compliance and NPDES Construction Stormwater General Permit Water Quality Order 99-08-DWQ: General Permit for Storm Water Discharges Associated with Construction Activity (Wat. Code § 13000 *et seq*.)

Agency	Permit, Decision, Approval, or Other Action [a]
	Other Considerations Water Quality Control Plan for San Francisco Bay/Sacramento–San Joaquin Delta Estuary General Certification Order for Dredging for Restoration Projects Groundwater Quality Monitoring Act (Wat. Code §§ 10780–10782.3) State Water Board Decision 1641 (Water Quality)
Central Valley Regional Water Quality Control Board (potential CEQA responsible agency)	Permits or Consultations Discharges Associated with Construction Activity (33 USC § 1342) Regional General Permits Waste discharge requirements for dredging projects or fill-related activities Porter-Cologne Water Quality Control Act of 1969 (California Water Code, Div. 7 and 2009 Amendments) National Pollutant Discharge Elimination System (316(b) Permit) Stormwater Permit
Delta Stewardship Council	Other Considerations Adjudicating any appeals of DWR's certification of consistency with the *Delta Plan*
State Lands Commission (CEQA responsible agency, trustee agency)	Other Considerations Possible lease involving granted tide and submerged lands
California Department of Parks and Recreation (potential CEQA responsible agency, trustee agency)	Permits or Consultations Possible encroachment permit Davis-Dolwig Act (Wat. Code §§ 11900–11925) consultation
California Department of Boating and Waterways (potential CEQA responsible agency)	Other Considerations Coordination on construction activities that restrict boating activities, including coordination of closure areas and placement of signage
California Department of Transportation (CEQA responsible agency)	Permits or Consultations Encroachment Permit for realignment of State Route 160 and all proposed tunnel crossings under I-5 and state routes Other Considerations State Aeronautics Act of 2017 (Pub. Util. Code § 21001 et seq.)
Central Valley Flood Protection Board (potential CEQA responsible agency)	Permits or Consultations Coordination consistent with local sponsor requirements under USACE Section 408 requirements Encroachment Permit
Regional Air Pollution Control Districts, California Air Resources Board (potential CEQA responsible agencies)	Permits or Consultations Permit to Operate Authority to Construct Air quality management plans Other Considerations Indirect source review (Rule 9510) in SJVAPCD
State Historic Preservation Officer	Permits or Consultations Consultation under National Historic Preservation Act, Section 106 California State Projects (Pub. Resources Code §§ 5024, 5024.5)

Agency	Permit, Decision, Approval, or Other Action [a]
Division of Safety of Dams (potential CEQA responsible agency)	Permits or Consultations California Code of Regulations Title 23, Section 310
California Public Utilities Commission	Permits or Consultations Right-of-way Potential relocation of utilities
Participating SWP Contractors (CEQA responsible agencies)	Agreement to fund Approval of water supply contract amendments with DWR
Sacramento Municipal Utility District	Approval of Interconnection Application
Sacramento, San Joaquin, Contra Costa, Yolo, Alameda Counties (potential CEQA responsible agencies)	Permits or Consultations Right-of-way; utility relocations; roadway improvements
Various Levee Maintenance and Reclamation Districts (potential CEQA responsible agencies)	Consultations Right-of-way
Delta Conveyance Design and Construction Authority (responsible agency for the project under CEQA)	Involved in actions and discretionary approvals related to design and construction of Delta Conveyance Project facilities
Port of Stockton (CEQA responsible agency)	Coordination consistent with local sponsor requirements under USACE Section 408 requirements
East Bay Municipal Utility District (CEQA responsible agency)	Right-of-way; encroachment permit
California Department of Toxic Substances Control	Other Considerations California Hazardous Substance Account Act of 1999 (Health & Saf. Code, Div. 20, Ch. 6.8) California Hazardous Waste Control Law of 1972 (Health & Saf. Code, Div. 20, Ch. 6.5) Hazardous Waste Program (Health & Saf. Code §§ 25100–25250.28)
Certified Unified Program Agency	Other Considerations Hazardous Materials Release Response Plans and Inventory (Hazardous Materials Business Plan) (Health & Saf. Code, Div. 20, Ch. 6.95 §§ 25500–25520) Accidental Release Prevention Law of 1996 (Health & Saf. Code §§ 25531–25543.3)
California Environmental Protection Agency	Other Considerations Hazardous Wastes and Substances Site List
California Department of Forestry and Fire Protection	Other Considerations Fire Hazard Severity Zones (Pub. Resources Code §§ 4201–4204; Gov. Code §§ 51178, 51179)

CEQA = California Environmental Quality Act; DWR = California Department of Water Resources; SJVAPCD = San Joaquin Valley Air Pollution Control District; State Water Board = State Water Resources Control Board; SWP = State Water Project.

[a] This list is not all-inclusive, and the agencies may use the Draft EIR for other requirements not identified in this table.

1.5.3 Federal Agencies

A listing of some of the federal agencies and their respective potential review, approval, and other responsibilities, in addition to those under NEPA, is provided in Table 1-2.

1.5.3.1 U.S. Army Corps of Engineers

USACE has regulatory authority over activities within certain waters within the project area. USACE would be required to issue an authorization for that activity under one of the following provisions.

- Section 404 of the CWA
- Section 10 of the Rivers and Harbors Act
- Section 14 of the Rivers and Harbors Act (33 USC § 408)

NEPA Compliance

As the federal lead agency for compliance with NEPA for federal agency review requirements of the project, USACE will prepare the Delta Conveyance Project EIS. While this is a standalone document, it is expected to rely upon and reference information contained in this Draft EIR to provide background and supporting information while making separate and independent NEPA conclusions of the effects of the project on the human environment. The EIS will also provide USACE with information needed in the CWA and the Rivers and Harbors Act permitting processes.

Section 404 of the Clean Water Act

Activities that would result in the discharge of dredged or fill materials into waters of the United States must obtain authorization from USACE pursuant to Section 404 of the CWA (33 USC § 1251 *et seq.*). A permit issued under Section 404 can take the form of either a General Permit or an Individual Permit. Individual Permits are designed for activities that have the potential to have more than a minimal effect on jurisdictional waters or that otherwise do not qualify to proceed under a General Permit. The discharge activities that would occur under the project alternatives would require an Individual Permit.

In order to coordinate NEPA review with DWR's preparation of this Draft EIR, on June 15, 2020, DWR submitted a Department of the Army permit application pursuant to Section 404 of the CWA and Section 10 of the Rivers and Harbors Act (Section 404 permit application) to USACE to request authorization for the project activities in waters of the United States. On November 22, 2021, DWR submitted a supplemental letter to inform USACE of DWR's desire to amend the permit application (as it was previously amended on June 15, 2020) to replace the previously identified Eastern Alternative with the Bethany Reservoir Alternative as the proposed project (California Department of Water Resources 2021d). A final permit decision will not be made until after DWR has decided whether to approve a final project and USACE has completed its review of the project under NEPA. In addition, the USACE permit decision is contingent on completing other compliance components of Section 404 as well as Section 7 of the ESA and Section 106 of the National Historic Preservation Act. The USACE permit decision must also be supported by the State Water Board issuance of water quality certification under Section 401 of the CWA. For certain components of the project, the USACE Section 404 permit decision also requires issuance of a Section 408 permission, as defined below.

USACE is responsible for making final Section 404 and Rivers and Harbors Act permit decisions, including final determinations of compliance with USACE permit regulations, and the Section 404(b)(1) Guidelines (33 USC § 1344; 40 Code of Federal Regulations [CFR] § 230.11; CWA Section 404(q) Memorandum of Agreement between the Environmental Protection Agency and the Department of the Army to "Minimize, to the Maximum Extent Practicable, Duplication, Needless Paperwork and Delays in the Issuance of Permits" [August 11, 1992] [404(q) MOA]).

Section 10 of the Rivers and Harbors Act

Activities that would involve the construction of any structure in or over any navigable water of the United States must obtain authorization from USACE pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 USC § 403 *et seq*.; 33 CFR Part 322 *et seq*.). Structures or work outside the limits defined for navigable waters of the United States require a Section 10 permit if "the structure or work affects the course, location, or condition of the water body" (33 CFR § 322.3(a)). The law applies to any dredging or disposal of dredged materials, excavation, filling, rechannelization, or any other modification of a navigable water of the United States, and applies to all structures, from the smallest floating dock to the largest commercial undertaking (33 CFR § 322.2(b)).

Where the activities overlap, the process for obtaining a permit under Section 10 of the Rivers and Harbors Act is combined with the process for obtaining a permit under Section 404 of the CWA and compliance with the 404 permitting criteria will cover the substantive requirements of the Rivers and Harbors Act permitting process. The activities related to navigable waters would occur under the project alternatives and would require a permit under Section 10 of the Rivers and Harbors Act. DWR has applied to USACE for issuance of one permit consistent with both Section 10 of the Rivers and Harbors Act and Section 404 of the CWA.

Section 14 of the Rivers and Harbors Act

Section 14 of the Rivers and Harbors Act (33 USC § 408) requires permission from the Secretary of the Army, acting through USACE, to alter an existing USACE civil works project. This is generally referred to as "Section 408 permission." To grant permission under Section 408, USACE must determine that the proposed alteration does not impair the usefulness of the USACE project and would not be injurious to the public interest. Section 408 permission would be required for alteration and/or modification of federally constructed levees associated with the project alternatives. The informational requirements under the Section 408 process necessarily include a detailed level of engineering design, as well as a detailed level of analysis related to effects on the USACE civil works projects and indirect hydraulic effects.

On May 22, 2020, the Central Valley Flood Protection Board (CVFPB) submitted a "Statement of No Objection" letter to USACE pursuant to the Section 408 requirements, as described by the USACE Engineering Circular 1165-2-220. The statement documented that CVFPB, as the non-federal sponsor, had no objection to USACE's review of the Delta Conveyance Project. This letter of no objection initiated state and federal review of the project for its potential to affect the federal–state flood control system in California's Central Valley.

1.5.3.2 U.S. Fish and Wildlife Service and National Marine Fisheries Service

The United States Congress passed the ESA in 1973 to provide a means for conserving endangered and threatened species and the ecosystems on which they depend. The ESA has two major

components (Section 7 and Section 9) relevant to the project alternatives. The project will require ESA compliance.

Section 9 of the Endangered Species Act

Section 9(a)(1)(B) of the ESA prohibits the take by any person of any endangered fish or wildlife species; take of threatened fish or wildlife species is prohibited by regulation. The ESA prohibits the take of any listed threatened fish or wildlife species in violation of any regulation promulgated by USFWS or NMFS. *Take* under ESA is defined broadly to mean harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct (16 USC § 1532). *Harm* is defined by regulation to mean an act that actually kills or injures wildlife, including those activities that cause significant habitat modification or degradation resulting in the killing or injuring of fish or wildlife by significantly impairing essential behavior patterns, including breeding, spawning, rearing, migrating, feeding, or sheltering (50 CFR § 17.3; 50 CFR § 222.102). The take prohibitions of the ESA apply except as specifically provided under provisions of the ESA including Section 7. The protections for listed plant species under the ESA are more limited than for fish and wildlife.

Section 7 of the Endangered Species Act

Section 7 of the ESA provides that each federal agency, such as the USACE, must ensure, in consultation with the Secretary of the Interior or Commerce, that any actions authorized, funded, or carried out by the agency are not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of areas designated as critical habitat (16 USC § 1536(a)(2)). Section 7 requires federal agencies to engage in formal consultation with USFWS and/or NMFS for any proposed actions that are likely to adversely affect listed species. A BiOp is issued by USFWS or NMFS at the completion of formal consultation. The BiOp can conclude that the project as proposed is either likely or not likely to jeopardize the continued existence of the species or destroy or adversely modify designated critical habitat. If the BiOp concludes no jeopardy and no destruction or adverse modification, the action can proceed as proposed consistent with the incidental take statement, which specifies the impact (i.e., the amount or extent) of incidental taking of the species. The incidental take statement may contain "reasonable and prudent measures" that are designed to minimize the level of incidental take, and terms and conditions that must be complied with to implement the reasonable and prudent measures. Any taking that complies with the terms and conditions of the incidental take statement is not a prohibited taking under the ESA, and no other authorization or permit under the ESA is required (50 CFR § 402.14(i)(5)). If the BiOp concludes jeopardy or destruction or adverse modification, USFWS or NMFS will identify "reasonable and prudent alternatives" to the proposed action that would avoid jeopardizing the species or the destruction or adverse modification of designated critical habitat.

USACE is the action agency that will consult on project activities within its jurisdiction with the federal wildlife agencies pursuant to Section 7. USFWS and NMFS will assume roles as cooperating agencies, rather than as lead agencies, for purposes of the NEPA review.

It is expected that USFWS and NMFS each will ultimately prepare a BiOp as well as an incidental take statement for federally listed species.

Magnuson-Stevens Fisheries Conservation and Management Act

Section 305(b) of the Magnuson-Stevens Fisheries Conservation and Management Act as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297) requires federal agencies to consult with NMFS on activities that may adversely affect essential fish habitat for species that are managed under federal fishery management plans in United States waters. The statutory definition of *essential fish habitat* includes "those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity," which encompasses all physical, chemical, and biological habitat features necessary to support the entire life cycle of the species in question. Waters potentially affected by the project include essential fish habitat for Pacific salmon, groundfish, and coastal pelagic fishes, and it is expected that compliance with the Magnuson-Stevens Fisheries Conservation and Management Act for the project or any of the project alternatives would be integrated with consultation under Section 7 of the ESA.

1.5.3.3 Environmental Protection Agency

Section 404 of the Clean Water Act

In conjunction with USACE, the U.S. Environmental Protection Agency (EPA) promulgates guidelines (and guidance on those guidelines) that USACE applies to the Section 404 permit process. EPA may provide USACE with comments during the permitting process (33 USC § 1344(b)(1); 40 CFR Part 230, 40 CFR § 230.2(c)).

EPA may elevate an Individual Permit to its Washington DC Headquarters for resolution if the EPA Regional Administrator determines that "the net loss (i.e., after considering mitigation) from the project (i.e., within the scope of impacts being evaluated by the Corps), will result in unacceptable adverse effects to aquatic resources of national importance" pursuant to Section 404(q) (33 USC § 1344(q)) and *CWA Section 404(q): Memorandum of Agreement between EPA and Department of the Army (Text)* (U.S. Environmental Protection Agency 1992). Under Section 404(c) of the CWA, if EPA determines, after notice and opportunity for public hearings, that the permitted activity would have unacceptable adverse impacts on an aquatic or wetland ecosystem that is likely to result in significant degradation of municipal water supplies or on fishing, wildlife, or recreation areas (33 USC § 1344(c); 40 CFR §§ 231.2(e), 231.3, 231.4), EPA may "veto" the Individual Permit. Specifically, EPA may (1) prohibit the specification (including the withdrawal of specification) of any defined areas as a disposal site and (2) deny or restrict the use of any defined area for specification (including the withdrawal of specification as a disposal site) (33 USC § 1344(c)).

1.5.3.4 Bureau of Reclamation

Reclamation is a cooperating agency to USACE on the EIS. Reclamation has not expressed an interest to involve the CVP in the project or alternatives. However, because previous Delta conveyance efforts included various levels of participation from Reclamation and CVP contractors, alternatives that include CVP participation (Alternatives 2a and 4a in this document) are provided as part of the project to provide a comparison of the impacts (and potentially benefits) of possible CVP involvement.

Regardless of its involvement in the project, Reclamation would retain its authority to operate the relevant CVP Delta facilities in coordination with the SWP. Depending on water right and other

authorizations, Reclamation could potentially utilize the new intakes and conveyance facilities, through the Coordinated Operating Agreement.[6]

Table 1-2. Summary of Federal Agencies and Review, Approval, or Other Responsibilities, in Addition to Those under NEPA

Agency	Permit, Decision, Approval, or Other Action [a]
U.S. Army Corps of Engineers (NEPA lead agency)	Permits or Consultations Clean Water Act Section 404 Rivers and Harbors Act Section 10 Rivers and Harbors Act Section 14 (33 USC § 408) ESA Section 7 consultation Section 106 of the National Historic Preservation Act (54 USC § 306101 *et seq*.; 36 CFR Part 800) Other Considerations Federal Water Project Recreation Act (16 USC §§ 460(L) 12–21) Flood Control Act (Public Law 78-534, Stat. 890) Protection of Wetlands (EO 11990) Floodplain Management (EO 11988) Fish and Wildlife Coordination Act (16 USC §§ 661–667e) Executive Order 12898 (59 Federal Register [FR] 7629, February 16, 1994) Executive Order 14008 (86 FR 7619–763386)
U.S. Fish and Wildlife Service (NEPA cooperating agency)	Permits or Consultations All provisions of the Endangered Species Act, including: Biological Opinion (Section 7 of ESA) Other considerations Fish and Wildlife Coordination Act (16 USC §§ 661–667e) Migratory Bird Treaty Act (16 USC § 703 *et seq*.) EO 13186 Migratory Birds EO 13112 Invasive Species Bald and Golden Eagle Protection Act (16 USC § 668–668c)
National Marine Fisheries Service (NEPA cooperating agency)	Permits or Consultations All provisions of the Endangered Species Act, including: Biological Opinion (Section 7 of ESA) Other Considerations Essential Fish Habitat under Magnuson-Stevens Fisheries Conservation and Management Act Fish and Wildlife Coordination Act (16 USC §§ 661–667e)
U.S. Environmental Protection Agency (NEPA cooperating agency)	NEPA Review (Clean Air Act, Section 309) Clean Water Act Section 404 Review Other Considerations Hazardous Materials Transportation Act of 1975 (49 USC §§ 5101–5127; 49 CFR § 171 (C))

[6] The Coordinated Operating Agreement (COA) was entered into at the direction of Congress by the United States of America and the State of California in November 1986. It was amended in 2018 through an addendum which addresses key elements of the Agreement to reflect the evolved manner in which the SWP and CVP have been operated since the COA was originally authorized and signed.

Agency	Permit, Decision, Approval, or Other Action [a]
Bureau of Reclamation (NEPA cooperating agency)	NEPA Review
U.S. Coast Guard	Permits Rivers and Harbors Act Section 9 Bridge Permits Construction in Navigable Waters Navigational Aids—Private Aids to Navigation
Natural Resources Conservation Service	Farmland Protection Policy Act (7 USC § 4201 *et seq*.)
Federal Aviation Administration	Other Considerations Safe, Efficient Use and Preservation of Navigable Airspace (14 CFR Part 77)
Federal Railroad Administration	Other Considerations Rail Safety Regulations (49 CFR Parts 200–299)

EO = Executive Order; ESA = Endangered Species Act; NEPA = National Environmental Protection Act; USC = United States Code.

a This list is not all-inclusive, and the agencies may have other requirements not identified in this table.

1.6 Public Scoping and Issues of Known Controversy

Project scoping took place from January 15, 2020, to April 17, 2020. The scoping period was originally scheduled for 65 days ending on March 20, 2020, but was extended for an additional 28 days per the request of interested parties to allow for additional time to review project information, and to accommodate unprecedented circumstances related to the coronavirus disease 2019 (COVID-19) pandemic. During this period, the public was invited to participate in the scoping process, and DWR accepted public comments on the project. Eight public scoping meetings were held in February and March 2020 to gather public input on the scope of the Draft EIR and to involve interested parties, other agencies, and the public early in the decision-making process to identify issues and concerns to examine during the preparation of the Draft EIR. Over 2,000 individuals, organizations, and agencies submitted comments to DWR.

More detailed information on the scoping process is provided in Chapter 35, *Public Involvement*. The scoping report is provided in Appendix 1A, *July 2020 Delta Conveyance Project Scoping Summary Report and December 2020 Addendum A*, of this Draft EIR and includes the NOP of an EIR, as well as written comments and testimony from agencies and the public from the CEQA public scoping meetings. Comments received have been considered throughout the planning effort and are part of the administrative record.

CEQA requires that the lead agencies identify issues of known controversy that were raised during the scoping process and throughout the development of the project alternatives described in the Draft EIR. DWR considered these concerns in the development of the project and in preparation of the Draft EIR. The following list outlines the issues that were identified by governmental agencies and the public, as well as briefly pointing the reader to where these issues are addressed.

- **Purpose and Objectives.** Commenters varied on whether they agreed with the purpose and objectives stated in the NOP, with some expressing the opinion that SWP export areas should find alternative sources of water. Other commenters requested a broader project purpose and

objectives that should include ecosystem restoration and flood safety. The project purpose and objectives are laid out in Chapter 2, *Purpose and Project Objectives*.

- **Range of Alternatives.** The range and adequacy of alternatives is an issue of concern to the public as well as to some governmental agencies. The alternatives development and screening process is discussed in Appendix 3A, *Identification of Water Conveyance Alternatives,* which provides additional details on the information that was used in developing the alternatives.
- **Water Supply and Surface Water Resources.** Water supply and surface water resources—key drivers for development of the project and its alternatives—are controversial issues for a wide array of interested parties (e.g., agricultural interests, hunting and fishing interests, water agencies, local jurisdictions) because of the potential changes in Delta hydrodynamic conditions attributable to changes in the SWP points of diversion in the Delta. DWR will seek to obtain authorization from the State Water Board for new SWP points of diversion. Such changes would not include new water rights; however, there are concerns that the project could result in the potential for increased exports and further reliance on water that moves through the Delta. Water supply and surface water impacts on the Trinity and Klamath River areas were of interest. There was a focus on future impacts both related and unrelated to the project operations, such as sea level rise, flooding, and degradation of adjacent levees. These issues are addressed in Chapter 5, *Surface Water,* and Chapter 6, *Water Supply.*
- **Flood Protection.** Flood protection is a controversial issue because of concerns that implementation of the project would entail modification of some existing levees as well as changes in flood flow regimes. These issues are addressed in Chapter 7, *Flood Protection.*
- **Water Quality.** Water quality is an issue of controversy because of concerns regarding construction activities associated with the conveyance facilities and facility operation that could potentially change surface water flows, which commenters allege could lead to discharge of sediment, possible changes in salinity patterns, and potential water quality changes. Constituents of primary interest to commenters were cyanobacteria harmful algae blooms (CHABs) and salinity. These issues are addressed in Chapter 9, *Water Quality*.
- **Climate Change.** The likely effects of climate changes on water supplies and the Delta ecosystem are of concern to interested parties. The potential effects of climate change on resources are factored into the analysis of each resource, in its associated appendices. The approach to analyzing climate change impacts is further discussed in Chapter 4, *Framework for the Environmental Analysis,* and Chapter 30, *Climate Change,* presents the latest climate change science and discusses the impacts of the project alternatives and climate change and Appendix 5A, *Modeling Technical Appendix*, describes how climate change was modeled for the project.
- **Biological Resources.** Concerns have been raised about the project's potential environmental impacts on the aquatic ecosystem and fish species, and on the terrestrial ecosystem and plant and wildlife species. For aquatic biological resources, there were concerns about fish in the Klamath, Trinity, Sacramento, American, and San Joaquin River watersheds. For terrestrial biological species, commenters expressed concern regarding effects on upland habitat as well as impacts on wetlands. The impacts on fish and aquatic biological resources are addressed in Chapter 12, *Fish and Aquatic Resources,* and impacts on terrestrial biological resources are addressed in Chapter 13, *Terrestrial Biological Resources*.
- **Agricultural Resources.** Because the project area is largely devoted to agricultural uses, the potential effects of the project on existing agricultural activities are controversial, as expressed

in scoping comments. Additional concerns are conversion of agricultural lands to other uses (i.e., water conveyance facilities and lands used for compensatory mitigation). The impacts on agricultural resources are addressed in Chapter 15, *Agricultural Resources*.

- **Recreation.** Concerns relating to recreation include potential conflicts between construction and operation of new conveyance facilities and ongoing Delta recreational activities (e.g., boating, fishing, hunting, enjoyment of marinas). Commenters were especially interested in potential impacts on navigable waterways. The impacts are discussed in Chapter 16, *Recreation,* and Chapter 20, *Transportation.*
- **Socioeconomics.** The key socioeconomic concerns involve the impacts of construction activities on local Delta communities and the potential for loss of revenue and employment associated with a decrease in agricultural production resulting from conversion of agricultural land to other uses, as well as the potential decrease in tax revenues due to such a decline in agricultural activities. A comparative discussion of the socioeconomic impacts that would result under each alternative is provided in Chapter 17, *Socioeconomics*.
- **Aesthetics/Visual Resources.** Potential effects of new facilities on aesthetics and visual resources are controversial to local Delta residents as well as others (e.g., recreationists) who utilize the Delta. These concerns focus largely on the proposed intake facilities and other facilities such as the Southern Forebay. Potential impacts are discussed in Chapter 18, *Aesthetics and Visual Resources*.
- **Environmental Justice and Disadvantaged Communities.** The potential for the project to induce disproportionately high and adverse environmental impacts on minority and low-income communities is a concern that was raised during scoping. These issues are addressed in Chapter 29, *Environmental Justice.*
- **Growth.** One of the project objectives is to address water supply reliability to SWP contractors south of the Delta. Concerns regarding the potentially growth-inducing consequences of the project generally focused on the potential effects of a stabilized water supply to the southern part of the state as well as from roadway improvements made to facilitate construction or to mitigate potential traffic impacts in the Delta. The potential for growth resulting under each alternative is discussed in Chapter 31, *Growth Inducement*.
- **Cultural and Tribal Resources.** Concerns were expressed regarding the potential of the project to damage or destroy cultural and Tribal resources, including disturbing sensitive archaeological resources such as burial sites. These issues are addressed in Chapter 19, *Cultural Resources*, and Chapter 32, *Tribal Cultural Resources.*
- **Community Issues.** Potential community issues, such as construction noise, air quality, and traffic circulation effects, conversion of existing land uses, access to private lands, and changes in the character of Delta communities are areas of concern for Delta residents. These issues have been addressed through evaluation of a wide range of resource impacts addressed in Chapter 24, *Noise and Vibration*, Chapter 23, *Air Quality and Greenhouse Gases*, Chapter 20, *Transportation*, Chapter 26, *Public Health,* Chapter 14, *Land Use*, and Chapter 17, *Socioeconomics.* The impacts of the proposed Community Benefits Program are presented in Chapter 34, *Community Benefits Program Analysis.*