Chapter 13

13.1 Introduction

This chapter describes non-agricultural land use in the study area, and potential changes that could occur as a result of implementing the alternatives evaluated in this Environmental Impact Statement (EIS). Implementation of the alternatives could affect municipal and industrial land uses through potential changes in the Central Valley Project (CVP) and State Water Project (SWP) operation. Changes in agricultural land use and resources are described in Chapter 12, Agricultural Resources. Changes to population are described in Chapter 19, Socioeconomics.

13.2 Regulatory Environment and Compliance Requirements

Potential actions that could be implemented under the alternatives evaluated in this EIS could affect land uses served by CVP and SWP water supplies. Actions done on public agency lands, or implemented, funded, or approved by Federal and state agencies would need to be compliant with appropriate Federal and state agency policies and regulations (summarized in Chapter 4, Approach to Environmental Analysis).

13.3 Affected Environment

This section describes land use conditions potentially affected by the implementation of the alternatives considered in this EIS. Changes in land uses from changes in CVP and SWP operations may occur in the Trinity River, Central Valley, San Francisco Bay Area, Central Coast, and Southern California regions. An extensive range of land uses are within this study area. However, direct or indirect land use effects from implementing the alternatives analyzed in this EIS are related to changes in agricultural, municipal, and industrial land uses from the availability and reliability of CVP and SWP water supplies. The following description of the affected environment is presented at the county-level for agricultural and municipal and industrial land uses. More detailed agricultural land use information is presented in Chapter 12, Agricultural Resources.

13.3.1 Trinity River Region

The Trinity River Region includes the area in Trinity County along the Trinity River from Trinity Lake to the confluence with the Klamath River; and in Humboldt and Del Norte counties along the Klamath River from the confluence...
with the Trinity River to the Pacific Ocean. Tribal lands are also included for the entire Trinity River Region.

### 13.3.1.1 Trinity County

Trinity County encompasses approximately 3,206 square miles in northwestern California. It is bounded on the north by Siskiyou County, on the east by Shasta and Tehama Counties, on the south by Mendocino County, and on the west by Humboldt County. About 76 percent of the land area is within a national forest (Shasta-Trinity, Six Rivers, and Mendocino) and in four wilderness areas (Yolla Bolly-Middle Eel Reserve, Trinity Alps, Chancellura, and North Fork). Another 14 percent is zoned for timber use or held in agriculture land conservation contracts (Trinity County 2012).

The headwaters of the Trinity River are in the northeastern part of the County at an elevation of 6,200 feet, in the southern Siskiyou Mountains. Trinity Lake and Lewiston Reservoir are located along the middle reach of the mainstem Trinity River. Downstream of Lewiston Dam, the river flows northwest to join the Klamath River in Humboldt County (Trinity County 2012).

Development of communities is relatively limited in Trinity County because much of the land is within national forests and tribal lands or is characterized by steep slopes. The largest communities in Trinity County include Lewiston, Weaverville, and Hayfork (Trinity County 2012).

Trinity County’s primary industries are tourism and timber and is the sixth largest timber producer in the state, with substantial acreage in National Forest and private holdings. There is one operating mill in the County. Recreational opportunities are also important in this area, as described in Chapter 15, Recreation Resources (Trinity County 2012).

The portion of Trinity County in the Trinity River Region that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes areas in the vicinity of CVP facilities (Trinity Lake and Lewiston Reservoir) and areas along the Trinity River that use the river.

### 13.3.1.2 Humboldt County

Humboldt County encompasses approximately 3,570 square miles in northwestern California. It is bounded on the north by Del Norte County, on the east by Siskiyou and Trinity counties, on the south by Mendocino County, and on the west by the Pacific Ocean. About 25 percent of the land area is within the Six Rivers National Forest, Trinity Alps Wilderness Area, Redwood National and State National Park, national wildlife refuges, or other public land. About 3 percent of the land area is within state park lands. The Yurok and Hoopa tribal lands represent about 5.6 percent of the land within Humboldt County boundaries (Humboldt County 2012).

Most of the population and developed areas are located in western Humboldt County along U.S. Highway 101 (Humboldt County 2012). Incorporated cities and residential lands in unincorporated portions of Humboldt County represent less than 1 percent of the county. Development of communities is relatively
limited in Humboldt County because much of the land is within national forests and tribal lands, characterized by steep slopes, or within the coastal zone where new large scale developments are minimized. Timber and agricultural lands are located on over 60 percent of unincorporated areas of Humboldt County.

Humboldt County’s primary industries are lumber manufacturing, retail, and services (Humboldt County 2012). Humboldt County provides over 25 percent of the lumber in the state.

The portion of Humboldt County in the Trinity River Region evaluated in this EIS is located along the Trinity and Klamath rivers. Most of this area is located within the Hoopa Valley Indian Reservation and Yurok Indian Reservation. This portion of the county includes the communities of Willow Creek and Orleans within Humboldt County; Hoopa in the Hoopa Valley Indian Reservation; and the communities of Weitchpec, Cappell, Pecwan, and Johnson’s in the Yurok Tribe Indian Reservation (Humboldt County 2012).

13.3.1.3 Del Norte County

Del Norte County encompasses 1,070 square miles in northwestern California. It is bounded on the north by the State of Oregon, on the east by Siskiyou County, on the south by Humboldt County, and on the west by the Pacific Ocean. Del Norte County includes lands within national forests (Six Rivers and Rogue River-Siskiyou), Smith River National Recreation Area, Redwood National and State Park, or other federally owned land. State lands include units of the Redwoods State Park and the Lake Earl Wildlife Area. The Yurok tribal lands are located along the lower Klamath River between the Del Norte and Humboldt county boundaries to the Pacific Ocean (Del Norte County 2003).

Del Norte County’s primary industries are retail and services (Del Norte County 2003).

The portion of Del Norte County in the Trinity River Region evaluated in this EIS is located along the lower Klamath River. Most of this area is within the Yurok Indian Reservation. This portion of the County includes the communities of Requa and Klamath in the Yurok Tribe Indian Reservation (Del Norte County 2003).

13.3.1.4 Tribal Lands in Trinity River Region

The major federally recognized tribes and tribal lands in the Trinity River Region include the tribal lands of the Hoopa Valley Tribe, Yurok Tribe of the Yurok Reservation, Resighini Rancheria, and Karuk Tribe. Aquatic and wildlife resources associated with the Trinity and Klamath rivers and the surrounding lands are very important to these tribes (NCRWQCB et al. 2009; Yurok Tribe 2005; Karuk Tribe 2010).

The Hoopa Valley Indian Reservation includes 93,702.73 acres (Hoopa Valley Tribe 2008). The Trinity River flows through the Hoopa Valley Indian Reservation.
The Yurok Indian Reservation includes about 55,890 acres within Tribal trust, Tribal fee, allotment, Tribal member fee, nonmember fee, Federal, state, and county lands (Yurok Tribe 2012). The Tribe employs over 250 in the government agency, as well as seasonal workers for fisheries, forestry, fire prevention, and other programs.

The Resighini Rancheria includes about 435 acres of land along the south bank of the lower Klamath River and extends from an inland area to the U.S. Highway 101 bridge along the western boundary of the Rancheria (Reclamation 2010). The Rancheria is surrounded by the Yurok Indian Reservation (Reclamation 2010; Resighini Rancheria 2014). The community includes tribal offices, a casino, campground, residences, agricultural lands, and open space.

The Karuk Ancestral Territory is located to the north of the Trinity River in the vicinity of Trinity County and east of the Trinity River in the vicinity of Humboldt County (Karuk Tribe 2010). The western boundary of the Karuk Ancestral Territory is relatively concurrent with the western boundary of the Six Rivers National Forest. Therefore, changes in the Trinity River flow or water quality that could be affected by changes in CVP and/or SWP operations considered in the alternatives in this EIS would not occur within the Karuk Ancestral Territory.

13.3.2 Central Valley Region

The Central Valley Region extends from above Shasta Lake to the Tehachapi Mountains, and includes the Sacramento Valley, San Joaquin Valley, Delta, and Suisun Marsh.

13.3.2.1 Sacramento Valley

The Sacramento Valley includes the counties of Shasta, Plumas, Tehama, Glenn, Colusa, Butte, Sutter, Yuba, Nevada, Placer, El Dorado, and Sacramento counties. Yolo and Solano counties are also located within the Sacramento Valley; however, these counties are discussed as part of the Delta and Suisun Marsh subsection because potential changes in land use because of changes in CVP and SWP long-term operations would primarily occur within the Delta and Suisun marsh geography. Other counties in this region are not anticipated to be affected by changes in CVP and SWP operations, and are not discussed here, including: Alpine, Sierra, Lassen, and Amador counties. Tribal lands are also described for the entire Sacramento Valley.

13.3.2.1.1 Shasta County

Shasta County encompasses approximately 3,793 square miles in northern California. It is bounded on the north by Siskiyou County, on the east by Lassen County, on the south by Tehama County, and on the west by Trinity County. Shasta County includes lands within national forests (Shasta-Trinity, Whiskeytown-Shasta-Trinity, and Lassen), Lassen Volcanic National Park, or other federally owned land. State lands include state forest and state parks (Shasta County 2004).
1. The Shasta County General Plan identifies four major categories of land use: urban, rural, agricultural, and timber (Shasta County 2004). Of Shasta County's 2,416,440 acres, 613,495 acres (25 percent) are designated as timber preserve zones pursuant to California's Forest Taxation Reform Act of 1976 (Shasta County 2004). Approximately 169,127 acres (7 percent), are designated as agricultural preserve lands.

2. Approximately 1.2 percent of the lands in the County are within incorporated areas (Shasta County 2004). Urban development is concentrated in the southern central portion of the county in the cities of Redding, Anderson, and Shasta Lake (Reclamation 2005a).

3. The portion of the Central Valley Region, Sacramento Valley in Shasta County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes CVP facilities (Shasta Lake, Keswick Reservoir, and Whiskeytown Lake), areas along the Sacramento River and Clear Creek that use the surface waters (including agricultural lands), and CVP water service areas.

13.3.2.1.2 Plumas County

4. Plumas County encompasses approximately 2,610 square miles in northern California. It is bounded on the north by Shasta County, on the east by Lassen County, on the west by Tehama and Butte counties, and on the south by Sierra County. Plumas County includes lands within national forests (Plumas, Lassen, Toiyabe, and Tahoe), Lassen Volcanic National Park, or other federally owned land. State lands include Plumas-Eureka State Park (Plumas County 2012).

5. Prominent landscape features in Plumas County are the Sierra Valley, the Lake Almanor Basin, and the Upper Feather River watershed which includes three SWP lakes (Antelope Lake, Lake Davis, and Frenchman Lake). The largest land uses in the county are agricultural and timber resource lands. Rural and semi-rural development is scattered throughout the County, with most growth concentrated in several designated planning areas. The county’s only incorporated area is the City of Portola.

6. The most recent Plumas County General Plan was adopted in 1984. The county is in the process of updating its General Plan through 2030 (Plumas County 2012). Approximately 76 percent of the land in Plumas County is National Forest land owned and managed by the U.S. Forest Service. The U.S. Forest Service prepared the Plumas National Forest Land and Resource Management Plan in 1988, to guide management and land use planning decisions in the forest. The National Forest Land and Resource Management Plan provides a designation for areas based on established priorities for various resources, including wilderness, recreation, wildlife, timber, and visual resources (Plumas County 2012).

7. The portion of the Central Valley Region, Sacramento Valley in Plumas County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS is located at the SWP Antelope Lake, Lake Davis, and Frenchman Lake and along the Feather River downstream of Frenchman Lake.
13.3.2.1.3 Tehama County

Tehama County encompasses approximately 2,951 square miles in northern California. It is bounded on the north by Shasta County, on the east by Plumas County, on the west by Trinity and Mendocino counties, and on the south by Glenn and Butte counties. Tehama County includes lands within national forests (Lassen, Mendocino, and Shasta-Trinity), Lassen Volcanic National Park, or other federally owned land (Tehama County 2008).

Tehama County is predominantly rural, with populations primarily concentrated in the incorporated cities of Corning, Red Bluff, and Tehama or along the major transportation corridors. The incorporated areas include less than 1 percent of the total land area in the county. The primary incorporated and unincorporated developed areas in the county are adjacent to major transportation centers, with most adjacent to Interstate 5 and State Route 99. Clusters of commercial land uses are located primarily along the major state and county roadways. Most are near Red Bluff, Corning, and the unincorporated community of Los Molinos. Residential land uses in the developed portions of the county tend to be located behind or beyond the commercial and service uses adjacent to the major street network (Tehama County 2008).

Ranches, timber company holdings, and government land dominate the county. Much of the land use is resource-based, such as cropland, rangeland, pasture land, and timber land (Tehama County 2008). The majority of land within the CVP water service area in Tehama County is designated for agricultural use (Tehama County 2008; Reclamation 2005b).

The portion of the Central Valley Region, Sacramento Valley in Tehama County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes CVP facilities, areas along the Sacramento River that use the surface waters (including agricultural lands), and CVP water service areas.

13.3.2.1.4 Glenn County

Glenn County encompasses 1,317 square miles in northern California. It is bounded on the north by Tehama County, on the east by Butte County, on the west by Lake and Mendocino counties, and on the south by Colusa County. Glenn County includes lands within the Mendocino National Forest, Sacramento National Wildlife Refuge, and other federally owned land (Glenn County 1993).

Approximately two-thirds (583,974 acres) are croplands and pasture. The two incorporated towns in the county are Willows, the County seat, and Orland (Reclamation 2004). Intensive agriculture provides a major segment of the county’s economic base (Glenn County 1993; Reclamation 2005b). The portion of the Central Valley Region, Sacramento Valley in Glenn County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes wildlife refuges (described in Chapter 10, Terrestrial Biological Resources), and CVP facilities, areas along the Sacramento River that use the surface waters (including agricultural lands), and CVP water service areas.
13.3.2.1.5 Colusa County

Colusa County encompasses approximately 1,132 square miles in northern California. It is bounded on the north by Glenn County, on the east by Butte and Sutter counties, on the west by Lake County, and on the south by Yolo County. Colusa County includes lands within the Mendocino National Forest, Sacramento National Wildlife Refuge complex (Colusa, Delevan, and Sacramento national wildlife refuges); East Park Reservoir; and other federally owned land (Colusa County 2011). State lands in Colusa County include Willow Creek-Lurline, North Central Valley, Colusa Bypass, and Sacramento River wildlife management areas.

Existing land uses in Colusa County are predominantly agricultural. Approximately 76 percent of the county’s total land area is cropland or undeveloped rangeland. Twelve percent is national forest and national wildlife refuge land. Less than 1 percent is covered by urban and rural communities. Colusa and Williams are the only incorporated cities in the county and they encompass about 2,574 acres (Colusa County 2011). Arbuckle is the largest unincorporated town of the unincorporated communities, which includes Arbuckle, College City, Century Ranch, Grimes, Maxwell, Princeton, and Stonyford. Together, these established incorporated and unincorporated towns cover a total area in “urban” uses of about 5,451 acres (Colusa County 2011). The majority of land within the CVP water service area in Colusa County is designated for agricultural use (Colusa County 2011; Reclamation 2005b).

The portion of the Central Valley Region, Sacramento Valley in Colusa County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes wildlife refuges (described in Chapter 10, Terrestrial Biological Resources) and CVP facilities, areas along the Sacramento River that use the surface waters (including agricultural lands), and CVP water service areas.

13.3.2.1.6 Butte County

Butte County encompasses 1,680 square miles in northern California. It is bounded on the north by Tehama County, on the east by Plumas County, on the west by Glenn and Colusa counties, and on the south by Sutter and Yuba counties. Butte County includes lands within national forests (Plumas and Lassen), Sacramento National Wildlife Refuge (Butte County 2010). State lands in Butte County include Big Chico Creek and Butte Creek ecological preserves; Table Mountain Reserve; Gray Lodge, Sacramento River, and Oroville wildlife areas; SWP facilities at Lake Oroville and Thermalito Reservoir; and more than 750 miles of rivers and streams.

The county comprises three general topographical areas: valley region, foothills east of the valley, and mountain region east of the foothills. Each of these regions contains distinct environments with unique wildlife and natural resources. The U.S. Forest Service manages 135,427 acres (12 percent) within Butte County, including portions of the Plumas and Lassen National Forests. The Bureau of Land Management owns and manages 16,832 acres (1.5 percent) in the county.
(Butte County 2010). Agriculture is the dominant land use within unincorporated Butte County, accounting for approximately 599,040 acres (60 percent of the county area) (Butte County 2010).

Butte County contains five incorporated municipalities: Biggs, Chico, Gridley, Oroville, and Paradise. Each has a general plan that guides development within its limits and larger planning area (Butte County 2010).

The portion of the Central Valley Region, Sacramento Valley, in Butte County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes wildlife refuges (described in Chapter 10, Terrestrial Biological Resources), SWP facilities (Lake Oroville and Thermalito Afterbay), CVP facilities, areas along the Feather River that use the surface waters (including agricultural lands), and CVP and SWP water service areas.

13.3.2.1.7 Sutter County

Sutter County encompasses approximately 607 square miles in northern California. It is bounded on the north by Butte County, on the east by Yuba and Placer counties, on the west by Colusa and Yolo counties, and on the south by Sacramento County. Sutter County includes lands within the Sutter National Wildlife Refuge. State lands in Sutter County include Butte Slough, Feather River, Gray Lodge, Sutter Bypass, and Butte Sink wildlife management areas; and Sutter Buttes State Park (Sutter County 2010).

Sutter County’s General Plan was updated in 2011. Approximately 98 percent of the land in the County is unincorporated, and approximately 98 percent of the unincorporated land is zoned for agricultural use (Reclamation 2004). The two incorporated cities within the county, Yuba City and Live Oak, encompass approximately 10,600 acres.

Existing land use in Sutter County is rural and dominated by agricultural areas. The county has significant natural and recreational resources, and a relatively low population density. Existing land uses in Yuba City and Live Oak contain the bulk of the county’s urban land uses, such as residences, commercial and industrial uses, parks, and public facilities (Sutter County 2010). The county includes several incorporated rural communities: Meridian, Sutter, Robbins, Rio Oso, Trowbridge, Nicolaus, East Nicolaus, and Pleasant Grove (Sutter County 2010).

The portion of the Central Valley Region, Sacramento Valley in Sutter County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes wildlife refuges (described in Chapter 10, Terrestrial Biological Resources), CVP facilities, areas along the Sacramento River that use the surface waters (including agricultural lands), and CVP and SWP water service areas.

13.3.2.1.8 Yuba County

Yuba County encompasses approximately 634 acres in northern California. It is bounded on the north by Butte County, on the east by Sierra and Nevada counties, on the west by Sutter County, and on the south by Placer County. Federally
owned lands in Yuba County include Tahoe and Plumas National Forests, and the 22,944-acre Beale Air Force Base (Yuba County 2011). The Department of Fish and Wildlife administers the state Spenceville Wildlife Area.

Yuba County is predominantly rural. Over 189,500 acres (46 percent of the county), are designated for agricultural land uses. Most of the population lives in the two incorporated cities in the county (Marysville and Wheatland); and the major unincorporated communities including Brown’s Valley, Brownsville, Camptonville, Dobbins, Linda/Olivehurst, Log Cabin, Loma Rica, Oregon House, Rackerby, and River Highlands (Yuba County 2011).

The portion of the Central Valley Region, Sacramento Valley in Yuba County that could be affected by changes evaluated in this EIS includes areas within Yuba County Water Agency facilities that provide water for environmental and water supply purposes within the Central Valley.

**13.3.2.1.9 Nevada County**

Nevada County encompasses approximately 634,880 acres in northern California. It is bounded on the north by Sierra County, on the northwest by Yuba County, on and south by Placer County. Federally owned lands in Nevada County include 169,686 acres in the Tahoe National Forest; 2,574 acres in the Toiyabe National Forest; and approximately 11,000 acres administered by the Bureau of Land Management (Nevada County 1995). The State Lands Commission manages approximately 4,600 acres; State Parks administers 6,300 acres at several locations, including Malakoff Diggins State Historical Park and Empire Mine State Park; and the Department of Fish and Wildlife administers approximately 11,000 acres at the Spenceville Wildlife Management and Recreation Area.

Nevada County is predominantly rural (Nevada County 2012). Approximately 91 percent of the county is used for agriculture, timber, or open space. Most of the population lives in the three incorporated cities in the county (Grass Valley, Nevada City, and Truckee).

**13.3.2.1.10 Placer County**

Placer County encompasses approximately 1,506 square miles in northern California. It is bounded on the north by Nevada County, on the east by the California-Nevada boundary, on the west by Yuba and Sutter counties, and on the south by Sacramento and El Dorado counties. Placer County includes lands within the El Dorado and Tahoe National Forests and other federally owned land (Placer County 2011).

Placer County is predominantly rural. Most of the population lives in the area along Interstate 80 from the City of Auburn to the Sutter and Sacramento county boundaries. Incorporated cities and towns include Roseville, Rocklin, Lincoln, Colfax, Loomis, and Auburn (Placer County 2011; Reclamation 2005c; SACOG 2007). Residential land uses range from rural residential areas to medium and high-density dwelling units in urbanized areas. Commercial land uses are primarily located in the urbanized portions of the county; although a large
concentration of commercial development occurs outside existing urban areas along Interstate 80. Non-urban land uses include agriculture, resource extraction (timber and mining), and public lands and open space uses. The largest amount of public lands within Placer County is located in the eastern half of the county, and is under the jurisdiction of the Bureau of Land Management, U.S. Forest Service, or the Bureau of Reclamation. The CVP water service area within Placer County primarily includes the communities and agricultural areas in the western portion of the county. The portion of the Central Valley Region, Sacramento Valley in Placer County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes CVP water facilities (Folsom Lake), areas along the American River that use the surface waters (including agricultural lands), and CVP water service areas.

13.3.2.1.11 El Dorado County

El Dorado County encompasses approximately 1,790 square miles in northern California along the American River. It is bounded on the north by Placer County, on the east by California-Nevada boundaries, on the west by Sacramento County, and on the south by Amador and Alpine counties. El Dorado County includes about 521,210 acres (45.5 percent of the total county), under Federal ownership or trust, including lands within the El Dorado and Tahoe national forests. About 9,751 acres (8.5 percent of the county), is under the State jurisdiction (El Dorado County 2003).

The county includes two specific regions: the Lake Tahoe Basin and the western slopes of the Sierra Nevada (El Dorado County 2003). The CVP water service area provides water to a large portion of the communities and some agricultural areas along the western slope. El Dorado County includes two incorporated cities, Placerville and South Lake Tahoe, which cover 621 acres of land. Other major communities include El Dorado Hills, Cameron Park, Shingle Springs, Rescue, Diamond Springs, Camino, Coloma and Gold Hill, Cool and Pilot Hill, Georgetown and Garden Valley, Pollock Pines, Pleasant Valley, Latrobe, Somerset, and Mosquito. The rural land uses in the county include over 259,000 acres of private production forests, 153,472 acres of agricultural lands, and 35,282 acres within the waters of Folsom Lake and Lake Tahoe. The county’s two largest crops are wine grapes and apples.

The portion of the Central Valley Region, Sacramento Valley in El Dorado County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes CVP water facilities (Folsom Lake), areas along the American River that use the surface waters, and CVP water service areas.

13.3.2.1.12 Sacramento County

Sacramento County encompasses approximately 1,769 square miles in northern California. It is bounded on the north by Sutter and Placer counties, on the east by El Dorado and Amador counties, on the south by Contra Costa and San Joaquin counties, and on the west by Yolo and Solano counties. Sacramento County includes federally owned lands within Folsom Lake and Lake Natoma.
Chapter 13: Land Use

Residential areas in Sacramento County primarily occur in northern and central Sacramento County. Sacramento County includes areas within the Delta, including the southwestern portion of the City of Sacramento, City of Isleton and the communities of Locke, Ryde, Courtland, Freeport, Hood, and Walnut Grove; and areas located to the east of the Delta (Sacramento County 2011). Sacramento County has seven incorporated cities located in about 56 percent of the county: Sacramento, Elk Grove, Citrus Heights, Folsom, Galt, Isleton, and Rancho Cordova. The County includes several unincorporated communities including Antelope, Arden-Arcade, Carmichael, Cordova, Elverta, Foothill Farms, Fair Oaks, Herold, Natomas, North Highlands, Orangevale, Rancho Murieta, Rio Linda, Sloughhouse, and Wilton.

The leading agricultural crops in Sacramento County include dairy, wine grapes, Bartlett pears, field corn, and turkeys (Sacramento County 2010). Agricultural acreage has declined as urban development has continued. Between 1989 and 2004, the portion of the county designated as agriculture declined from 40 percent to 34 percent. The southeastern portion of the county remains primarily rural with smaller communities, such as Herald (Sacramento County 2011).

The portion of the Central Valley Region, Delta, in Sacramento County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes CVP facilities (Folsom Lake and Lake Natoma), areas along the American and Sacramento rivers and Delta channels that use the surface waters (including agricultural lands), and CVP water service areas.

13.3.2.13 Tribal Lands in Sacramento Valley

This section summarizes the tribal lands that could be affected by changes in CVP and/or SWP operations and that are located within the county boundaries.

Tribal Lands within the Boundaries of Shasta County

Major federally recognized tribes and tribal lands within the boundaries of Shasta County include the Pit River Tribe and the Redding Rancheria, which is a federal reservation of Wintun, Pit River, and Yana Indians near Redding (SDSU 2013).

Tribal Lands within the Boundaries of Tehama County

There are approximately 2,000 acres within the total acreage of Tehama County within tribal trust, including land near Corning owned by the Paskenta Band of Nomlaki Indians of California (Paskenta 2014).

Tribal Lands within the Boundaries of Glenn County

Major federally recognized tribes and tribal lands within the boundaries of Glenn County include the Grindstone Indian Reservation near Elk Creek at the Grindstone Indian Rancheria of Wintun-Wailaki Indians of California, and lands of the Paskenta Band of Nomlaki Indians of California.

Tribal Lands within the Boundaries of Colusa County

Major federally recognized tribes and tribal lands within the boundaries of Colusa County include the Cachil Dehe Band of Wintun Indians of the Colusa Indian
Community of the Colusa Rancheria, and the Cortina Indian Rancheria of Wintun Indians of California (Colusa County 2011).

Tribal Lands within the Boundaries of Butte County
Major federally recognized tribes and tribal lands within the boundaries of Butte County include the Tyme Maidu of Berry-Creek Rancheria on approximately 90 acres, and the Concow Maidu of Mooretown Rancheria on approximately 300 acres (Butte County 2010).

Tribal Lands within the Boundaries of Nevada County
Major federally recognized tribes and tribal lands within the boundaries of Nevada County include tribal trust lands of the Shingle Springs Band of Miwok Indians.

Tribal Lands within the Boundaries of Placer County
Major federally recognized tribes and tribal lands within the boundaries of Placer County include tribal trust lands of the United Auburn Indian Community of the Auburn Rancheria of California.

Tribal Lands within the Boundaries of El Dorado County
Major federally recognized tribes and tribal lands within the boundaries of El Dorado County include the Shingle Springs Band of Miwok Indians.

Tribal Lands within the Boundaries of Sacramento County
Major federally recognized tribes and tribal lands within the boundaries of Sacramento County include lands of the Wilton Miwok Indians of the Wilton Rancheria near Elk Grove (SACOG 2007).

13.3.2.2 San Joaquin Valley
The San Joaquin Valley includes Stanislaus, Merced, Madera, San Joaquin, Fresno, Kings, Tulare, and Kern counties. Other counties in this region are not anticipated to be affected by changes in CVP and SWP operations, and are not discussed here. They include Calaveras, Mariposa, and Tuolumne counties.

Tribal lands are also described for the entire San Joaquin Valley.

13.3.2.2.1 Stanislaus County
Stanislaus County encompasses approximately 1,521 square miles in central California. It is bounded on the north by San Joaquin County, on the east by Calaveras and Tuolumne counties, on the west by Santa Clara County, and on the south by Merced County. Stanislaus County includes lands within the San Joaquin River National Wildlife Refuge (Stanislaus Council of Governments 2007).

Land use in the county is primarily agricultural, with nearly 80 percent of the land zoned for general agriculture or in agricultural production (Stanislaus Council of Governments 2007). Over the past 40 years, some portions of the county have been changing from a rural agricultural region to semi-urbanized, especially along major highways and freeways. There are nine incorporated cities in the county, including Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank,
Turlock, and Waterford. Stanislaus County has adopted community plans for most of its unincorporated towns, including Crows Landing, Del Rio, Denair, Hickman, Keyes, Knights Ferry, La Grange, Westley, and Salida (Stanislaus County 2010, 2012).

The portion of the Central Valley Region, San Joaquin Valley, in Stanislaus County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes wildlife refuges (described in Chapter 10, Terrestrial Biological Resources), CVP water facilities (New Melones Reservoir, Delta-Mendota Canal, and San Luis Canal/California Aqueduct), areas along the Stanislaus and San Joaquin rivers that use the surface waters (including agricultural lands), and CVP water service areas.

**13.3.2.2 Merced County**

Merced County encompasses approximately 1,977 square miles in central California. It is bounded on the north by Stanislaus County, on the east by Mariposa County, on the south by Fresno and Madera counties, and on the west by Santa Clara and San Benito counties. Merced County includes federally owned lands within the San Luis National Wildlife Refuge (Merced County 2013). State lands within the county include San Luis Reservoir State Recreation Area; Great Valley Grasslands State Park; and the Los Banos, North Grasslands, and Volta wildlife areas.

Merced County includes the six incorporated cities of Atwater, Dos Palos, Gustine, Livingston, Los Banos, and Merced. The major unincorporated communities include Delhi, Fox Hills, Franklin, Hilmar, LeGrand, Planada, Santa Nella, Laguna San Luis, and Winton (Merced County 2013). Unincorporated land within the county includes approximately 1.2 million acres (98.1 percent of the land in the county). Agriculture is the primary land use, totaling just over 1 million acres (81.2 percent). Public and quasi-public land is the next largest use with 131,582 acres or 10.6 percent of the unincorporated County. Commercial land uses represent 3,025 acres (0.2 percent), industrial uses represent 2,488 acres (0.2 percent), and mining represents 3,375 acres (0.3 percent). Incorporated cities account for 24,138 acres (1.9 percent) (Merced County 2012a, 2013). The Merced County Local Agency Formation Commission policies discourage annexation of prime agricultural land when significant areas of non-prime agricultural land are already available. The policies also encourage development of vacant areas in cities before the annexation and development of outlying areas. Local Agency Formation Commission policies encourage city annexations that reflect a planned, logical, and orderly progression of urban expansion and promote efficient delivery of urban services (Merced County 2012b).

The portion of the Central Valley Region, San Joaquin Valley in Merced County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes wildlife refuges (described in Chapter 10, Terrestrial Biological Resources), CVP and SWP water facilities (San Luis Reservoir, Delta-Mendota Canal, and San Luis Canal/California Aqueduct), areas along the San Joaquin
Chapter 13: Land Use

13.3.2.2.3 Madera County
Madera County encompasses approximately 2,147 square miles in central California. It is bounded on the north by Merced and Mariposa counties, on the east by Mono County, and on the south and west by Fresno County. Madera County includes lands within the Sierra and Inyo national forests (Madera County 1995). State lands within the county include the Millerton Lake State Recreation Area.

Land elevations in Madera County range from 180 feet to over 13,000 feet above mean sea level. Madera County can be divided generally into three regions—the San Joaquin Valley in the west, the foothills between the Madera Canal and the 3,500-foot elevation contour, and the mountains from the 3,500-foot contour to the crest of the Sierra Nevada. The County has two incorporated cities, Madera and Chowchilla (Madera County 1995). Major unincorporated communities in the county include North Fork, South Fork, O’Neals, Oakhurst, Coarsegold, Gunner Ranch, and Rio Mesa.

The portion of the Central Valley Region, San Joaquin Valley, in Madera County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes CVP water facilities (Millerton Lake and the Madera Canal), areas along the San Joaquin River that use the surface waters (including agricultural lands), and CVP water service areas.

13.3.2.2.4 San Joaquin County
San Joaquin County encompasses approximately 1,426 square miles in central California. It is bounded on the north by Sacramento County, on the east by Calaveras and Amador counties, on the south by Stanislaus County, and on the west by Contra Costa and Alameda counties. San Joaquin County includes about 6,000 acres of federally owned lands (San Joaquin County 2009).

San Joaquin County is currently in the process of updating its General Plan. Most of the county’s land is in agricultural production. Agriculture, the predominant land use, covers 686,109 acres (75 percent) of the county. Residential land is the second largest use in the unincorporated lands, encompassing 40,410 acres (4.4 percent of the county). Residential development in the county is concentrated in existing cities and in adjacent unincorporated communities. San Joaquin County has seven incorporated cities: Stockton, Tracy, Manteca, Escalon, Ripon, Lodi, and Lathrop. Stockton and Tracy are the largest cities in the county. The major unincorporated areas in the county include French Camp, Linden, Lockeford, Morada, Mountain House, New Jerusalem, Thornton, and Woodbridge (San Joaquin County 2009). The incorporated cities account for 90,191 acres (approximately 10 percent of the county).

The portion of the Central Valley Region, Delta in San Joaquin County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes CVP and SWP facilities (including facilities associated with Rock
Chapter 13: Land Use

13.3.2.2.5 Fresno County
Fresno County encompasses approximately 6,000 square miles in central California. It is bounded on the north by Merced and Madera counties, on the east by Mono and Inyo counties, on the south by Kings and Tulare counties, and on the west by San Benito and Monterey counties. Fresno County includes lands within Millerton Lake, Pine Flat Lake, the Sierra and Sequoia national forests, Sequoia National Monument, and Kings Canyon National Park (Fresno County 2000). State lands within the county include the Millerton Lake State Recreation Area, San Joaquin River Parkway, and Mendota Wildlife Area.

Fresno County is California's sixth-largest county. Agricultural land uses cover over 48 percent of the county, and resource conservation lands (e.g., forests, parks, and timber preserves) cover approximately 45 percent of the county. The 15 incorporated cities and unincorporated communities cover approximately 5 percent of the county (Fresno County 2000). Development constraints within the county are primarily caused by lack of funding for infrastructure improvement, availability of water supplies, air quality regulations, and physical limitations, especially in the mountains and eastern foothills. The incorporated communities include Clovis, Coalinga, Firebaugh, Fowler, Fresno, Huron, Kerman, Kingsburg, Mendota, Orange Cove, Parlier-West Parlier, Reedley, Sanger, San Joaquin, and Selma (Fresno County 2000). Major unincorporated communities include Biola, Caruthers, Del Rey, Friant, Lanare, Laton, Riverdale, Shaver Lake, and Tranquility.

The portion of the Central Valley Region, San Joaquin Valley in Fresno County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes CVP water facilities (Millerton Lake and the Friant-Kern Canal), areas along the San Joaquin River that use the surface waters, and CVP water service areas (including agricultural lands), and CVP water service areas.

13.3.2.2.6 Kings County
Kings County encompasses approximately 1,280 square miles in south central California. It is bounded on the north by Fresno County, on the east by Tulare County, on the south by Kern County, and on the west by Monterey County. Kings County includes lands within Naval Air Station Lemoore (Kings County 2009).

Land use is predominantly agricultural, with more than 90 percent of the county designated for agricultural uses. Incorporated cities in Kings County include Avenal, Corcoran, Hanford, and Lemoore. Residential land uses in unincorporated areas and special districts cover less than 1 percent of the county’s total acreage including for the communities of Armona, Home Garden, Kettleman City, and Stratford (Kings County 2009).
The portion of the Central Valley Region, San Joaquin Valley, in Kings County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes CVP and SWP water service areas.

13.3.2.2.7 Tulare County
Tulare County encompasses approximately 4,840 square miles in south central California. It is bounded on the north by Fresno County, on the east by Inyo County, on the south by Kern County, and on the west by Kings County. Tulare County includes federally owned lands within the Sequoia National Forest, Sequoia and Kings Canyon National Parks, Sequoia National Monument, several wilderness areas, Lake Kaweah, Lake Success, and Pixley National Wildlife Refuge (Tulare County 2010).

Agricultural land uses cover more than 2,150 square miles (approximately 44 percent) of the county. Lands classified as open space (i.e., national forests, monuments, and parks; wilderness areas; and County parks) make up 25 percent of the land use in the county. Less than 3 percent of the county lands are in the incorporated cities of Dinuba, Exeter, Farmersville, Lindsay, Porterville, Tulare, Visalia, and Woodlake (Tulare County 2010). Less than 2 percent of the county is designated for unincorporated residential areas, including the major communities of Alpaugh, Cutler, Ducor, Earlimart, East Oros, Goshen, Ivanhoe, Lemoncove, London, Oros, Pixley, Plainview, Poplar-Cotton Center, Richgrove, Springville, Strathmore, Terra Bella, Three Rivers, Tipton, Traver, and Woodville.

The portion of the Central Valley Region, San Joaquin Valley, in Tulare County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes CVP water service areas.

13.3.2.2.8 Kern County
Kern County encompasses approximately 8,202 square miles in south central California. It is bounded on the north by Kings, Tulare, and Inyo counties; on the east by San Bernardino County, on the south by Ventura and Los Angeles counties; and on the west by San Luis Obispo County. Kern County includes lands within the Sequoia National Forest, Kern and Bitter Creek national wildlife refuges, Lake Isabella, China Lake Naval Air Weapons Station, and Edwards Air Force Base (Kern County 2004). State lands within the county include the Tule Elk State Reserve.

The county’s geography includes mountainous regions, agricultural lands, and deserts. There are 11 incorporated cities in the county, including Arvin, Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter, Taft, Tehachapi, and Wasco (Kern County 2009). The major unincorporated communities include Kernville, Lake Isabella, Inyokern, Mojave, Boron, Rosamond, Golden Hills, Stallion Springs, and Buttonwillow. Agricultural land uses are designated for approximately 85 percent of the unincorporated lands that are under the jurisdiction of the county (not including lands under the jurisdiction...
of the Federal, state, tribes, or incorporated cities). Less than 6 percent of the
unincorporated lands under county jurisdiction are designated for residential uses.
The portion of the Central Valley Region, San Joaquin Valley, in Kern County
that could be affected by changes in CVP and/or SWP operations and evaluated in
this EIS includes CVP and SWP water service areas.

13.3.2.9 Tribal Lands in San Joaquin Valley
This section summarizes the tribal lands that could be affected by changes in CVP
and/or SWP operations and that are located within the county boundaries
described above.

Tribal Lands within the Boundaries of Madera County
Major federally recognized tribes and tribal lands within the boundaries of
Madera County include the Picayune Rancheria of the Chuckchansi Indians of
California near the community of Coarsegold and the Northfork Rancheria of the
Mono Indians of California near Northfork (SDSU 2013).

Tribal Lands within the Boundaries of Fresno County
Major federally recognized tribes and tribal lands within the boundaries of Fresno
County include the lands of the Big Sandy Rancheria of the Western Mono
Indians of California and Table Mountain Rancheria of California.

Tribal Lands within the Boundaries of Kings County
Major federally recognized tribes and tribal lands within the boundaries of Kings
County includes the lands of the Santa Rosa Indian Community of Santa Rosa
Rancheria near the town of Lemoore (SDSU 2013).

Tribal Lands within the Boundaries of Tulare County
Major federally recognized tribes and tribal lands within the boundaries of Tulare
County includes the Tule River Indian Tribe of the Tule River Reservation of the
Yokut Indians about 20 miles east of Porterville and covers 55,356 acres (SDSU
2013).

13.3.2.3 Delta and Suisun Marsh
The Delta and Suisun Marsh includes Sacramento, Yolo, Solano, San Joaquin,
and Contra Costa counties. Sacramento County is discussed in the Sacramento
Valley subsection because more of the land that could be affected by changes in
CVP and SWP long-term operations is located within the Sacramento Valley than
in the Delta and Suisun Marsh geographical areas. San Joaquin County is
discussed in the San Joaquin Valley subsection because more of the land that
could be affected by changes in CVP and SWP long-term operations is located
within the San Joaquin Valley than in the Delta and Suisun Marsh geographical
areas. Contra Costa County is discussed as part of the San Francisco Bay Region
because more of the land that could be affected by changes in CVP and SWP
long-term operations is located within the San Francisco Bay Region than in the
Delta and Suisun Marsh geographical areas.

Tribal lands are also described for Yolo County.
13.3.2.3.1 Yolo County

Yolo County encompasses approximately 1,021 square miles in northern California. It is bounded on the north by Colusa County, on the east by Sutter and Sacramento counties, on the south by Solano County, and on the west by Lake and Napa counties. Yolo County includes federally owned lands in the Yolo Bypass and Cache Creek areas and state lands within the Yolo Bypass.

Residential areas in Yolo County primarily occur in the county’s four incorporated cities (Davis, West Sacramento, Winters, and Woodland) that comprise approximately 32,325 acres (5 percent) of county lands (Yolo County 2009). Yolo County includes areas within the Delta, including the City of West Sacramento and the community of Clarksburg. The unincorporated portion of the county encompasses 35 community areas, including Capay, Clarksburg, Dunnigan, Esparto, Guinda, Knights Landing, Madison, Monument Hills, Rumsey, Yolo, and Zamora.

Yolo County adopted its 2030 General Plan in 2011. The general plan designates more than 92 percent of the County area for agricultural and open space uses. The major crops are tomatoes, alfalfa, wine grapes, rice, seed crops, almonds, organic production, walnuts, cattle, and wheat (Yolo County 2009).

The 59,000-acre Yolo Bypass is primarily located within Yolo County and includes a portion of the Sacramento River Flood Control Project, as described in Chapter 5, Surface Water Resources and Water Supplies (CALFED et al. 2001). The upper section of the Yolo Bypass is defined as the area between Fremont Weir and Interstate 80 and is located within Yolo County. The lower section is defined as the area between Interstate 80 and the southern boundary of Egbert Tract at the Sacramento River. The portion of the southern area located to the north of the upper Holland Tract and upper Liberty Island is within Yolo County. In the northern area, agricultural crops include rice, corn, and safflower with melons and tomatoes planted in years when the bypass is not inundated with flood waters. The southern bypass crops include corn, milo, safflower, beans, and sudan grass. Approximately 16,770 acres in the southern Yolo Bypass is within the Yolo Bypass Wildlife Area (Yolo County 2009).

The portion of the Central Valley Region, Delta in Yolo County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes areas in the Yolo Bypass and along the Delta channels that use the surface waters (including agricultural lands), and CVP water service areas.

13.3.2.3.2 Solano County

Solano County encompasses approximately 910 square miles in northern California. It is bounded on the north by Yolo County, on the east by Sutter and Sacramento counties, on the south by Contra Costa County, and on the west by Napa County. Solano County includes federally owned lands within Travis Air Force Base (Solano County 2008). State lands include areas within Suisun Marsh and the Cache Slough area of Yolo Bypass.
Solano County’s General Plan was adopted in 2008. Approximately 81,678 acres of the county (14 percent of the total land area), lies within seven incorporated cities: Benicia, Dixon, Fairfield, Rio Vista, Suisun City, Vacaville, and Vallejo. Urban development is generally concentrated within the incorporated cities or surrounding suburban communities. Travis Air Force Base is located on approximately 7,100 acres (1 percent of the land within the county). In 2006, agriculture accounted for 56.5 percent of the total land use in Solano County (Solano County 2008). The southern section of the Yolo Bypass, as described under the Yolo County subsection, is located within Solano County.

The portion of the Central Valley Region, Delta in Solano County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes SWP facilities (North Bay Aqueduct intakes at Barker Slough), areas in the Yolo Bypass and along the Delta channels that use the surface waters (including agricultural lands), and CVP and SWP water service areas.

13.3.2.3.3 Tribal Lands in Delta and Suisun Marsh

This section summarizes the tribal lands that could be affected by changes in CVP and/or SWP operations and that are located within the county boundaries described above.

Tribal Lands within the Boundaries of Yolo County

Major federally recognized tribes and tribal lands within the boundaries of Yolo County include lands of the Yocha Dehe Wintun Nation (previously called the Rumsey Indian Rancheria of Wintun Indians of California) (Yolo County 2009).

13.3.3 San Francisco Bay Area Region

The San Francisco Bay Area Region includes portions of Napa, Contra Costa, Alameda, Santa Clara, and San Benito counties that are within the CVP and SWP service areas.

13.3.3.1.1 Napa County

Napa County encompasses approximately 793 square miles in northern California. It is bounded on the north by Lake County, on the east by Yolo County, on the south by Solano County, and on the west by Sonoma County. Napa County includes 62,865 acres of federally owned and 40,307 acres of state-owned lands throughout the county, including approximately 28,000 acres related to Lake Berryessa and the State Cedar Rough Wilderness and Wildlife Area (Napa County 2007).

Approximately 479,000 acres (95 percent) of the county, are unincorporated. The five incorporated cities include American Canyon, Calistoga, Napa, and St. Helena, and the town of Yountville. Land use in the county is predominantly agricultural (Napa County 2007, 2008).

The portion of the San Francisco Bay Area Region in Napa County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes SWP water service areas.
### 13.3.3.1.2 Contra Costa County

Contra Costa County encompasses approximately 805 square miles in northern California. It is bounded on the north by Solano and Sacramento counties, on the east by San Joaquin County, on the south by Alameda County, and on the west by San Francisco Bay. Contra Costa County includes federally owned and state-owned lands throughout the county, including approximately 20,000 acres within Mount Diablo State Park (Contra Costa County 2005).

Over 40 percent of the county’s land is in agricultural production, or about 200,370 acres. Residential land is the second largest use in the county, encompassing approximately 122,100 acres (25.4 percent of the county).

Approximately 46,700 acres (9 percent of the land within the county), are within surface waters (Contra Costa County 2005).

Residential development is concentrated in existing cities and adjacent unincorporated communities. The Contra Costa County incorporated cities include Antioch, Brentwood, Clayton, Danville, El Cerrito, Hercules, Lafayette, Martinez, Moraga, Oakley, Orinda, Pinole, Pleasant Hill, Pittsburg, Richmond, San Pablo, San Ramon, and Walnut Creek. The major unincorporated areas in the county include Alamo, Bethel Island, Byron, Crockett, Discovery Bay, Kensington, Knightsen, North Richmond, Pacheco, Port Costa, and Rodeo (Contra Costa County 2005). Portions of the cities of Pittsburg, Antioch, Oakley, and Brentwood and eastern Contra Costa County are located within the Delta.

The portion of the San Francisco Bay Area Region in Contra Costa County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes CVP facilities (including facilities associated with Rock Slough), areas along the Delta channels that use the surface waters (including agricultural lands), and CVP water service areas.

### 13.3.3.1.3 Alameda County

Alameda County encompasses approximately 738 square miles in northern California. It is bounded on the north by Contra Costa County, on the east by San Joaquin County, on the south by Santa Clara County, and on the west by San Francisco Bay. Alameda County includes federally owned and state-owned lands throughout the county (Alameda County 2009).

Western Alameda County and the portions of the Livermore-Amador Valley are heavily urbanized. The incorporated cities include Oakland, which is the County seat; Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Piedmont, Pleasant, San Leandro, and Union City. The unincorporated area of the County covers approximately 277,760 acres (59 percent) of the total land area, includes the unincorporated areas of Castro Valley, Eden Area, and (Alameda County Community Development Agency 2010; Alameda County 2000, 2009). Large portions of the unincorporated areas located to the east of Castro Valley and within the Livermore-Amador Valley hills include agricultural and open space lands which are not served by the CVP or SWP water supplies.
The portion of the San Francisco Bay Area Region in Alameda County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes CVP and SWP facilities (including the SWP South Bay Aqueduct), reservoirs that store CVP or SWP water, and CVP and SWP water service areas.

13.3.3.1.4 Santa Clara County
Santa Clara County encompasses approximately 1,306 square miles in northern California. It is bounded on the north by Alameda County, on the east by Stanislaus and Merced counties, on the south by San Benito County, and on the west by San Mateo and Santa Cruz counties. Santa Clara County includes federally owned and state-owned lands throughout the county, including approximately 87,000 acres within Henry W. Coe State Park (Santa Clara County 1994, 2012).

Approximately 83 percent of the county’s population resides in the 15 incorporated cities. The incorporated cities include Campbell, Cupertino, Gilroy, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale. The southern portion of the county near Gilroy and Morgan Hill is predominantly rural, with low-density residential developments scattered throughout the valley and foothill areas (Santa Clara County 1994, 2012).

The portion of the San Francisco Bay Area Region in Santa Clara County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes CVP and SWP facilities (including the SWP South Bay Aqueduct and CVP facilities that convey water from San Luis Reservoir) and CVP and SWP water service areas.

13.3.3.1.5 San Benito County
San Benito County encompasses approximately 1,386 square miles in central California. It is bounded on the north by Santa Clara County, on the east by Merced and Fresno counties, and on the south and west by Monterey County. San Benito County includes federally owned and state-owned lands throughout the county, including approximately 26,000 acres within Pinnacles National Monument, over 105,403 acres owned by Bureau of Land Management, and over 8,800 acres associated with the Hollister Hills State Vehicular Recreation Area and San Juan Bautista State Historic Park (San Benito County 2010, 2013).

San Benito County has approximately 882,675 acres of unincorporated lands (nearly 99.5 percent of the total land area). The incorporated cities of Hollister and San Juan Bautista account for approximately 4,044 acres (0.5 percent of the county land area). Agriculture is the predominant land use, totaling 747,409 acres (84 percent of the county) (San Benito County 2010, 2013).

The portion of the San Francisco Bay Area Region in San Benito County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes CVP and SWP facilities (including San Justo Reservoir and other facilities to convey water from San Luis Reservoir) and CVP water service areas.
Chapter 13: Land Use

13.3.4 **Central Coast Region**

The Central Coast Region includes portions of San Luis Obispo and Santa Barbara counties served by the SWP. Tribal lands are also described for the Central Coast Region.

13.3.4.1 **San Luis Obispo County**

San Luis Obispo County encompasses approximately 3,594 square miles in central California, including over 200,000 acres of surface waters (San Luis Obispo County 2013). It is bounded on the north by Monterey County, on the east by Kern County, on the south by Santa Barbara County, and on the west by the Pacific Ocean. Federally owned land in San Luis Obispo County includes Los Padres National Forest, Carizzo Plain National Monument, several wilderness areas, and Guadalupe-Nipomo Dunes National Wildlife Refuge. State-owned lands include Hearst-San Simeon State Historical Monument, Montano de Oro State Park, and state beaches and marine conservation areas.

Land uses in the County are predominantly rural and agricultural with over 1,672,000 acres in agricultural and rural land uses (83 percent of the total county lands). Incorporated cities include Arroyo Grande, Atascadero, Grover Beach, Morro Bay, Paso Robles, Pismo Beach, and San Luis Obispo. Major unincorporated communities include Avila, California Valley, Creston Village, Edna Village, Heritage Ranch, Los Ranchos, Nipoma, Oak Shores, Oceano, San Miguel, Santa Margarita, and Templeton (San Luis Obispo County 2013).

The portion of the Central Coastal Region in San Luis Obispo County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes SWP facilities (including facilities associated with the Central Coast Water Authority) and SWP water service areas.

13.3.4.2 **Santa Barbara County**

Santa Barbara County encompasses approximately 2,744 square miles in central California. It is bounded on the north by San Luis Obispo, on the east by Ventura County, and on the south and west by the Pacific Ocean. Federally owned land in Santa Barbara County includes 629,120 acres in the Los Padres National Forest, 98,560 acres in the Vandenberg Air Force Base, Channel Islands National Park, and Guadalupe-Nipomo Dunes National Wildlife Refuge. The state-owned lands include the University of California at Santa Barbara, Sedgwick Reserve, La Purisima Mission State Park and other state parks, and Burton Mesa Ecological Reserve (Santa Barbara County 2009; SBCAG 2013).

Agricultural is the predominant land use in the county with over 1,440,000 acres (82 percent of the land) (Santa Barbara County 2009; SBCAG 2013). Santa Barbara County includes eight incorporated cities, Buellton, Carpenteria, Goleta, Guadalupe, Lompoc, Santa Barbara, Santa Maria, and Solvang. Less than 3 percent of the County is within incorporated cities. The major unincorporated communities include Cuyuama, Los Alamos, Los Olivos, Mission Hills, Montecito, New Cayamu, Orcutt, Summerland, and Vandenberg Village. The portion of the Central Coastal Region, in Santa Barbara County, that could be

13-22 Draft LTO EIS
affected by changes in CVP and/or SWP operations and evaluated in this EIS
includes SWP facilities (including facilities associated with the Central Coast
Water Authority), recreation facilities at Cachuma Lake that stores SWP water,
and SWP water service areas.

13.3.4.3 Tribal Lands in Central Coast Region
This section summarizes the tribal lands that could be affected by changes in CVP
and/or SWP operations and that are located within the county boundaries
described above.

Tribal Lands within the Boundaries of Santa Barbara County
Major federally recognized tribes and tribal lands within the boundaries of Santa
Barbara County include the Santa Ynez Reservation, which is home to the Santa
Ynez Band of Chumash Mission Indians of the Santa Ynez Reservation near
Santa Barbara (SDSU 2013).

13.3.5 Southern California Region
The Southern California Region includes portions of Ventura, Los Angeles,
Orange, San Diego, Riverside, and San Bernardino counties served by the SWP.
Tribal lands are also described for the Southern California Region.

13.3.5.1 Ventura County
Ventura County encompasses approximately 1,873 square miles in southern
California. It is bounded on the north by Kern County, on the east and south by
Los Angeles County, and on the west by Santa Barbara County and the Pacific
Ocean. Ventura County includes federally owned and state-owned lands
throughout the county, including 550,211 acres in Los Padres National Forest,
Chumash and Sespe wilderness area, 4,331 acres at the Point Mugu Naval Air
Station, 670 acres at the California State University Channel Islands, and over
410 acres in state beach parks (Ventura County 2013).

Ventura County has 10 incorporated cities, including Camarillo, Fillmore,
Moorpark, Ojai, Oxnard, Port Hueneme, Santa Paula, San Buenaventura, Simi
Valley, and Thousand Oaks (Ventura County 2013). Major unincorporated
communities within the county include Bell Canyon, Box Canyon, Camarillo
Heights, Del Norte, El Rio, Hidden Valley, Lake Sherwood, Matilija Canyon,
Montalvo, Oak Park, Ojai Valley, Piru, Saticoy, and Somis (Ventura County
2005).

The portion of the Southern California Region in Ventura County that could be
affected by changes in CVP and/or SWP operations and evaluated in this EIS
includes recreation at Lake Piru that stores SWP water, and SWP water service
areas.

13.3.5.2 Los Angeles County
Los Angeles County encompasses approximately 4,083 square miles in northern
California. It is bounded on the north by Kern County, on the east by San
Bernardino County, on the south by Orange County, and on the west by Ventura
Chapter 13: Land Use

Los Angeles County and the Pacific Ocean. Los Angeles County includes federally owned and state-owned lands throughout the county, including nearly 650,000 acres in Los Padres and Angeles national forests, portions of Edwards Air Force Base, over 29,000 acres of other federally owned open space (including wilderness areas), and approximately 50,893 acres of state-owned land, including Hungry Valley State Vehicular Recreation Area (Los Angeles County 2011).

More than half of Los Angeles County’s 1,698,240 acres of unincorporated land area is designated a natural resources land use category. The next highest land use is rural, which accounts for 39 percent of the unincorporated areas, followed by residential, which accounts for 3 percent of the unincorporated areas. The remaining land area is in the county’s 88 incorporated cities, the most populous of which is the City of Los Angeles (Los Angeles County 2012). The County has approximately 140 unincorporated areas (Los Angeles County 2014).

The portion of the Southern California Region in Los Angeles County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes SWP facilities and SWP water service areas.

13.3.5.3 Orange County

Orange County encompasses 948 square miles in southern California. It is bounded on the north by Los Angeles County, on the east by San Bernardino and Riverside counties, on the south by San Diego County, and on the west by the Pacific Ocean. Orange County includes federally owned lands, including lands in the Cleveland National Forests.

Orange County has 34 incorporated cities in Orange County. The unincorporated lands cover approximately 192,758 acres (Orange County 2005). Land zoned as open space forms the largest land use type (143,313 acres).

The portion of the Southern California Region in Orange County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes SWP facilities and SWP water service areas.

13.3.5.4 San Diego County

San Diego County encompasses approximately 4,525 square miles in southern California. It is bounded on the north by Orange and Riverside counties, on the east by Imperial County, on the south by Mexico, and on the west by the Pacific Ocean. San Diego County includes federally owned land, including Camp Pendleton Marine Corps Base, Cleveland National Forest, and San Diego and San Diego national wildlife refuges. State-owned lands throughout the county, includes Cuyamaca Rancho State Park, Anza-Borrego Desert State Park, Felipe Wildlife Area, and Ocotillo Wells State Vehicular Recreation Area (San Diego County 2011).

The incorporated cities include Carlsbad, Chula Vista, Coronado, Del Mar, El Cajon, Encinitas, Escondido, Imperial Beach, La Mesa, Lemon Grove, National City, Oceanside, Poway, San Marcos, Santee, Solano Beach, and Vista San Diego (San Diego County 2011). The unincorporated communities include Lakeside, Ramona, San Dieguito, Spring Valley, and Valle de Oro.
Chapter 13: Land Use

The portion of the Southern California Region in San Diego County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes SWP facilities, non-SWP reservoirs that store SWP water (including Dixon Lake; and San Vicente, Lower Otay, and Sweetwater Reservoir), and CVP water service areas.

13.3.5.5 Riverside County

Riverside County encompasses approximately 7,295 square miles in southern California. It is bounded on the north by San Bernardino County, on the east by the state of Nevada, on the south by San Diego and Imperial counties, and on the west by Orange County. Riverside County includes federally owned lands throughout the county, including March Air Reserve Base, Chocolate Mountains Naval Gunnery Range, Joshua Tree National Park, San Bernardino and Cleveland national forests, numerous wilderness areas, and Coachella Valley National Wildlife Refuge; and state-owned lands including San Jacinto and Santa Rose wildlife areas and Mount San Jacinto State Park (RCIP 2000).

Residential land use accounts for approximately 184,000 acres, nearly 57 percent of which are within incorporated cities. Approximately 1,313,000 acres (28 percent) is in open space, recreation, agriculture, and wildland preservation (RCIP 2000).

Most of the population is concentrated in the 24 incorporated cities of Banning, Beaumont, Calimesa, Canyon Lake, Cathedral City, Coachella, Corona, Desert Hot Springs, Hemet, Indian Wells, Indio, Lake Elsinore, La Quinta, Moreno Valley, Murrieta, Norco, Palm Desert, Palm Springs, Perris, Rancho Mirage, Riverside, San Jacinto, and Temecula. The major unincorporated communities in the county include Banning Bench, Bermuda Dunes, Cabazon, Cherry Valley, Cleveland Ridge, Desert Center, Eagle Mountain, El Cerrito, Lakeview/Nuevo, Meadowbrook, Mecca, Menifee Valley, North Palm Springs, Ripley, Sun City, Temescal Canyon, Tenaja, Thermal, Thousand Palms, Warm Springs, and Wildomar.

The portion of the Southern California Region in Riverside County that could be affected by changes in CVP and/or SWP operations and evaluated in this EIS includes SWP facilities, reservoirs that store SWP water (including Diamond Valley Lake and Lake Skinner), and SWP water service areas.

13.3.5.6 San Bernardino County

San Bernardino County encompasses approximately 20,106 square miles in southern California. It is bounded on the north by Inyo County, on the east by the state of Nevada, on the south by Riverside County, and on the west by Kern, Los Angeles, and Orange counties. Most of the land in San Bernardino County is federally owned and state-owned lands, including approximately 10,500,000 acres (81 percent of the county) (San Bernardino County 2007, 2012). The federally owned lands include 28 Bureau of Land Management wilderness areas (approximately 47 percent of the total county), San Bernardino and Angeles National Forests (676,666 and 655,387 acres, respectively), Mojave National
Chapter 13: Land Use

Preserve, Joshua Tree and Death Valley National Parks, and four military bases
(Edwards Air Force Base, Twentynine Palms Marine Corps Air Ground Combat
Training Center, Fort Irwin, and China Lake Naval Weapons Center). State-
owned lands include Silverwood Lake State Recreation Area at the SWP
reservoir, Wildwood Canyon State Park, and Providence Mountain and Chino
Hills state recreation areas.

San Bernardino County includes 24 incorporated cities, including Adelanto,
Apple Valley, Barstow, Big Bear Lake, Chino, Chino Hills, Colton, Fontana,
Grand Terrace, Hesperia, Highland, Loma Linda, Montclair, Needles, Ontario,
Rancho Cucamonga, Redlands, Rialto, San Bernardino, Twentynine Palms,
Upland, Victorville, Yucaipa, and Yucca Valley. Major unincorporated
communities in the county include Amboy, Baker, Bear Valley, Bloomington,
Crest Forest, Earp, Essex, Fontana suburbs, Goffs, Harvard, Havasu Lake,
Helendale, Hilltop, Hinckley, Homestead Valley, Joshua Tree, Kelso, Kramer
Junction, Lake Arrowhead, Landers, Lucerne Valley, Ludlow, Lytle Creek,
Mentone, Morongo Valley, Muscoy, Newberry Springs, Nipton, Oak Glen, Oak
Hills, Parker, Phelan/Pinon Hills, Pioneertown, Red Mountain, Rimrock, Silver
Lake, Trona, Vidal, and Yermo.

The portion of the Southern California Region in San Bernardino County that
could be affected by changes in CVP and/or SWP operations and evaluated in this
EIS includes SWP water service areas.

13.3.5.7 Tribal Lands in Southern California Region

This section summarizes the tribal lands that could be affected by changes in CVP
and/or SWP operations and that are located within the county boundaries
described above.

Tribal Lands within the Boundaries of San Diego County

Major federally recognized tribes and tribal lands within the boundaries of San
Diego County includes lands of the Capitan Grande Band of Diegueno Mission
Indians of California (Barona Reservation and Viejas Reservation), Cahuilla Band
of Mission Indians of the Cahuilla Reservation, Campo Band of Diegueno
Mission Indians of the Campo Indian Reservation, Ewiiaapaayp Band of
Kumeyaay Indians, Inaja Band of Diegueno Mission Indians of the Inaja and
Cosmit Reservation, Jamul Indian Village of California, La Jolla Band of Luiseno
Indians, La Posta Band of Diegueno Mission Indians of the La Posta Indian
Reservation, Los Coyotes Band of Cahuilla and Cupeno Indians, Manzanita Band
of Diegueno Mission Indians of the Manzanita Reservation, Mesa Grade Band of
Diegueno Mission Indians of the Mesa Grande Reservation, Pala Band of Luiseno
Mission Indians of the Pala Reservation, Pauma Band of Luiseno Mission Indians
of the Pauma & Yuima Reservation, Rincon Band of Luiseno Indians of the
Rincon Reservation, San Pasqual Band of Diegueno Mission Indians of
California, lipay Nation of Santa Ysabel, and Sycuan Band of Kumeyaay Nation.
Tribal Lands within the Boundaries of Riverside County


Tribal Lands within the Boundaries of San Bernardino County

Major federally recognized tribes and tribal lands within the boundaries of San Bernardino County include the lands of the San Manual Band of Mission Indians and the Twenty-Nine Palms Band of Mission Indians of California (SDSU 2013). The Chemehuevi Indian Tribe of the Chemehuevi Reservation is also located in San Bernardino County near the Colorado River.

13.4 Impact Analysis

This section describes the potential mechanisms for change in non-agricultural land uses and analytical methods; results of the impact analysis; potential mitigation measures; and potential cumulative effects.

13.4.1 Potential Mechanisms for Change and Analytical Tools

As described in Chapter 4, Approach to Environmental Analysis, the environmental consequences assessment considers changes in non-agricultural land uses related to changes in CVP and SWP operations under the alternatives as compared to the No Action Alternative and Second Basis of Comparison.

13.4.1.1 Changes in Land Uses

Land uses in 2030 are assumed to be consistent with the future projections included in existing general plans. The general plans were developed assuming adequate water supplies to support the projected lands uses. Changes in CVP and SWP operations under the No Action Alternative and Alternatives 1 through 5 could change the availability of CVP and SWP water supplies. If the CVP and SWP water supplies were reduced as compared to the No Action Alternative and Second Basis of Comparison to a level that would not support planned municipal and industrial water demands, development of future land uses may not occur. Potential changes to agricultural land uses are described in Chapter 12, Agricultural Resources.

Availability of CVP and SWP water supplies were analyzed using CalSim II model output (see Chapter 5, Surface Water Resources and Water Supplies). Most of the CVP and SWP municipal and industrial water users prepared Urban...
Water Management Plans (UWMPs) that project availability of water supplies to support land uses in 2030. That information was used with projected CVP and SWP water supply availability under each of the alternatives to determine if projected municipal and industrial water demands could be met in 2030 using the CWEST model, as described in Chapter 19, Socioeconomics. The results of the CWEST model indicated that municipal and industrial water demands of CVP and SWP water users in the Central Valley, San Francisco Bay Area, Central Coast, and Southern California regions would be met through a combination of water conservation, available CVP and SWP water supplies, local and regional surface water supplies, groundwater, recycled water, and, in some cases, desalination.

Alternative 4 includes provisions for floodway development regulations. It is assumed that under the No Action Alternative and Alternatives 1 through 5, existing programs to protect floodways would continue to be implemented, including Federal and state requirements as implemented by the U.S. Army Corps of Engineers (USACE), Central Valley Flood Protection Board, and Department of Water Resources (DWR). Within the Delta, the floodways are further regulated by the Delta Protection Commission and Delta Stewardship Council to preserve and protect the natural resources of the Delta; and prevent encroachment into Delta floodways, including the Delta Stewardship Council’s recently adopted Delta Plan. These regulations would continue to be implemented in the No Action Alternative, Alternatives 1 through 5, and the Second Basis of Comparison. Therefore, future development would be prevented from occurring within the Delta floodplains and floodways; and in the Sacramento, Feather, American, and San Joaquin river corridors upstream of the Delta. Provisions in Alternative 4 would require additional setbacks along the floodways as compared to other alternatives and the Second Basis of Comparison. The potential change in land use is analyzed qualitatively in this chapter.

The No Action Alternative, Alternatives 1 through 5, and Second Basis of Comparison include restoration of more than 10,000 acres of intertidal and associated subtidal wetlands in Suisun Marsh and Cache Slough; 17,000 to 20,000 acres of seasonal floodplain restoration in the Yolo Bypass; and continued delivery of refuge water supplies under the Central Valley Project Improvement Act, as described in Chapter 3, Description of Alternatives. Land uses in 2030 due to implementation of these programs would be consistent between all alternatives and the Second Basis of Comparison. Therefore, this EIS does not analyze changes due to these programs.

13.4.1.2 Effects Related to Cross Delta Water Transfers

Cross Delta water transfers involving the CVP and SWP facilities or water supplies would be required to be implemented in accordance with all existing regulations and requirements, including not causing adverse impacts to other water users in accordance with the requirements of Reclamation, DWR, and the State Water Resources Control Board. It is anticipated that water transfers would continue under all alternatives to provide water supplies to agricultural, municipal and industrial, and wildlife refuges under all alternatives and the Second Basis of
Comparison in a similar manner. Transfers for municipal and industrial water
users would be one of several water supply sources to meet the future water
demands in Year 2030. If the availability of transferred water is reduced, it is
anticipated that other water supplies (e.g., recycled water and desalination) would
be increased, as described in the UWMPs for 2030 water demands.

Reclamation recently prepared a long-term regional water transfer environmental
document which evaluated potential changes in surface water conditions related to
water transfer actions (Reclamation 2014c). Results from this analysis were used
to inform the impact assessment of potential effects of water transfers under the
alternatives as compared to the No Action Alternative and the Second Basis of
Comparison. The analysis indicated that water transfers would not result in
changes to non-agricultural land uses.

Under all of the alternatives and Second Basis of Comparison, it is assumed that
these transfers would continue to occur each year to meet the water demands in
the existing general plans. It is not anticipated that water transfers would change
municipal and industrial land uses as defined in the existing general plans. If a
water transfer program was implemented for the purposes of changing existing
general plan land uses, separate environmental documentation would be required
for the changes to the general plan and the water transfer. Potential effects due to
Cross Delta water transfers on in agricultural land uses are described in
Chapter 12, Agricultural Resources. Therefore, this chapter does not include
separate analyses of changes in municipal and industrial land uses due to cross
Delta water transfers.

13.4.2 Conditions in Year 2030 without Implementation of
Alternatives 1 through 5

This EIS includes two bases of comparison (described in Chapter 3, Description
of Alternatives): the No Action Alternative and the Second Basis of Comparison.
Both of these bases are evaluated at 2030 conditions.

13.4.2.1 No Action Alternative

The impact analysis in this EIS is based upon the comparison of the alternatives to
the No Action Alternative and the Second Basis of Comparison in the Year 2030.
Many of the changed conditions would occur in the same manner under both the
No Action Alternative and the Second Basis of Comparison (e.g., climate change,
sea level rise, projected development under existing general plans, and
implementation of reasonable and foreseeable projects). Due to these changes,
especially climate change and sea level rise, it is anticipated that CVP and SWP
water supply availability would be less than under recent conditions (described in
Chapter 5, Surface Water Resources and Water Supplies). However, it is
anticipated that projected land uses would occur by 2030 with implementation of
water conservation programs and the development of other water supplies,
including ongoing recycled water programs, desalination, and groundwater use.
By 2030 under the No Action Alternative and the Second Basis of Comparison, it is assumed that ongoing programs would result in restoration of more than 10,000 acres of intertidal and associated subtidal wetlands in Suisun Marsh and Cache Slough; and 17,000 to 20,000 acres of seasonal floodplain restoration in the Yolo Bypass.

Under the No Action Alternative and the Second Basis of Comparison, land uses in 2030 would occur in accordance with the general plans for counties and cities within the Central Valley Region; tribal lands; and regulations of state and regional agencies, including Central Valley Flood Protection Board, Delta Protection Commission, and Delta Stewardship Council.

Development along the river corridors in the Central Valley would continue to be limited by the state regulations to protect floodways. The Central Valley Flood Protection Board adopts floodway boundaries and approves uses within those floodways (DWR 2010). Various uses are permitted in the floodways, such as agriculture, canals, low dikes and berms, parks and parkways, golf courses, sand and gravel mining, structures that will not be used for human habitation, and other facilities and activities that will not be substantially damaged by the base flood event and will not cause adverse hydraulic impacts that will raise the water surface in the floodway.

Within the Delta, future development also is subject to the requirements of the Delta Protection Commission and Delta Stewardship Council. The general plans within the Delta are required by state laws to be consistent with the Delta Protection Commission’s Land Use and Resource Management Plan for the Primary Zone of the Delta (DPC 2010; OAL 2010), which does not allow development within the Primary Zone of the Delta unless proponents can demonstrate that implementing their projects would preserve and protect natural resources of the Delta, promote protection of remnants of riparian and aquatic habitat, not result in loss of wetlands or riparian habitat, would not degrade water quality, would not interfere with migratory birds or public access, would not harm agricultural operations, and would not degrade levees or expose the public to increased flood hazards. Farmers are encouraged to implement management practices to maximize habitat values for migratory birds and wildlife.

The Delta Plan adopted by the Delta Stewardship Council in May 2013 included a policy that protects floodways within the entire Delta that are not regulated by other Federal or state agencies (23 California Code of Regulations Section 5014). This policy prevents encroachment into floodways that would impede the free flow of water in the floodway or jeopardize public safety.

13.4.3 Evaluation of Alternatives
As described in Chapter 4, Approach to Environmental Analysis, Alternatives 1 through 5 have been compared to the No Action Alternative; and the No Action Alternative and Alternatives 1 through 5 have been compared to the Second Basis of Comparison.
During review of the numerical modeling analyses used in this EIS, an error was determined in the CalSim II model assumptions related to the Stanislaus River operations for the Second Basis of Comparison, Alternative 1, and Alternative 4 model runs. Appendix 5C includes a comparison of the CalSim II model run results presented in this chapter and CalSim II model run results with the error corrected. Appendix 5C also includes a discussion of changes in the comparison of the following alternative analysis:

- No Action Alternative compared to the Second Basis of Comparison
- Alternative 1 compared to the No Action Alternative
- Alternative 3 compared to the Second Basis of Comparison
- Alternative 5 compared to the Second Basis of Comparison.

### 13.4.3.1 No Action Alternative

As described in Chapter 4, Approach to Environmental Analysis, the No Action Alternative is compared to the Second Basis of Comparison.

#### 13.4.3.1.1 Changes in Land Use

No municipal and industrial land uses in the Trinity River Region are served by CVP and SWP water supplies. Therefore, the municipal and industrial land uses would be the same under the No Action Alternative and the Second Basis of Comparison in the Trinity River Region.

As described in Chapter 5, Surface Water Resources and Water Supplies, CVP and SWP water deliveries to municipal and industrial Sacramento River Water Rights Settlement Contractors and water rights holders would be similar under the No Action Alternative and the Second Basis of Comparison. CVP water deliveries to water service contractors over the long-term conditions would be 6 percent less for the North of Delta water users and 10 percent less for the South of Delta users under the No Action Alternative, compared to the Second Basis of Comparison. SWP water deliveries to water contractors over the long-term conditions (without Article 21 water) would be reduced by 18 percent throughout the SWP service area under the No Action Alternative, compared to the Second Basis of Comparison. However, as described in Chapter 19, Socioeconomics, 2030 municipal and industrial water demands would be met through a combination of available CVP and SWP water supplies and other water supplies, including water conservation, water transfers, local and regional surface water and groundwater, recycled water, and desalination. Adequate water supplies would be available to support future municipal and industrial land uses projected in existing general plans under the No Action Alternative and the Second Basis of Comparison. Therefore, land use in 2030 would be the same under the No Action Alternative and the Second Basis of Comparison in the Trinity River, Central Valley, San Francisco Bay Area, Central Coast, and Southern California regions.

### 13.4.3.2 Alternative 1

Alternative 1 is identical to the Second Basis of Comparison. Alternative 1 is compared to the No Action Alternative and the Second Basis of Comparison. However, because land use conditions under Alternative 1 are identical to land
use conditions under the Second Basis of Comparison, Alternative 1 is only compared to the No Action Alternative.

13.4.3.2.1 Alternative 1 Compared to the No Action Alternative

Change in Land Use

No municipal and industrial land uses in the Trinity River Region are served by CVP and SWP water supplies. Therefore, the municipal and industrial land uses would be the same under Alternative 1 and the No Action Alternative in the Trinity River Region.

As described in Chapter 5, Surface Water Resources and Water Supplies, CVP and SWP water deliveries to municipal and industrial Sacramento River Water Rights Settlement Contractors and water rights holders would be similar under Alternative 1 and the No Action Alternative. CVP water deliveries to water service contractors over the long-term conditions would be 7 percent greater for the North of Delta water users and 11 percent greater for the South of Delta users under Alternative 1 as compared to the No Action Alternative. SWP water deliveries to water contractors over the long-term conditions (without Article 21 water) would be increased by 22 percent under Alternative 1 as compared to the No Action Alternative. The increased CVP and SWP water supply availability would allow water users to reduce other water supplies, including groundwater. It is anticipated that the additional water supplies would not result in changes in the general plan development plans without subsequent environmental documentation. Adequate water supplies would be available to support future municipal and industrial land uses projected in existing general plans under Alternative 1 and the No Action Alternative. Therefore, land use in 2030 would be the same under Alternative 1 and the No Action Alternative in the Trinity River, Central Valley, San Francisco Bay Area, Central Coast, and Southern California regions.

13.4.3.2.2 Alternative 1 Compared to the Second Basis of Comparison

Alternative 1 is identical to the Second Basis of Comparison.

13.4.3.3 Alternative 2

The land use conditions under Alternative 2 would be identical to the conditions under the No Action Alternative; therefore, Alternative 2 is only compared to the Second Basis of Comparison.

13.4.3.3.1 Alternative 2 Compared to the Second Basis of Comparison

Changes to land use under Alternatives 2 as compared to the Second Basis of Comparison would be the same as the impacts described in Section 13.4.3.1, No Action Alternative.

13.4.3.4 Alternative 3

The CVP and SWP operations under Alternative 3 are similar to the Second Basis of Comparison with modified Old and Middle River flow criteria and New Melones Reservoir operations.
Alternative 3 would include changed water demands for American River water supplies as compared to the No Action Alternative or Second Basis of Comparison. Alternative 3 would provide water supplies of up to 17 thousand acre feet (TAF/year under a Warren Act Contract for El Dorado Irrigation District and 15 TAF/year under a Warren Act Contract for El Dorado County Water Agency. These demands are not included in the analysis presented in this section of the EIS. A sensitivity analysis comparing the results of the analysis with and without these demands is presented in Appendix 5B of this EIS.

13.4.3.4.1 Alternative 3 Compared to the No Action Alternative

Changes in Land Use

No municipal and industrial land uses in the Trinity River Region are served by CVP and SWP water supplies. Therefore, the municipal and industrial land uses would be the same under Alternative 3 and the No Action Alternative in the Trinity River Region.

As described in Chapter 5, Surface Water Resources and Water Supplies, CVP and SWP water deliveries to municipal and industrial Sacramento River Water Rights Settlement Contractors and water rights holders would be similar under Alternative 3 and the No Action Alternative. CVP water deliveries to water service contractors over the long-term conditions would be similar for the North of Delta water users and 9 percent greater for the South of Delta users under Alternative 3, compared to the No Action Alternative. SWP water deliveries to water contractors over the long-term conditions (without Article 21 water) would be increased by 17 percent under Alternative 3, compared to the No Action Alternative. The increased CVP and SWP water supply availability would allow water users to reduce other water supplies, including groundwater. It is anticipated that the additional water supplies would not result in changes in the general plan development plans without subsequent environmental documentation. Adequate water supplies would be available to support future municipal and industrial land uses projected in existing general plans under Alternative 3 and the No Action Alternative. Therefore, land use in 2030 would be the same under Alternative 3 and the No Action Alternative in the Trinity River, Central Valley, San Francisco Bay Area, Central Coast, and Southern California regions.

13.4.3.4.2 Alternative 3 Compared to the Second Basis of Comparison

Changes in Land Use

No municipal and industrial land uses in the Trinity River Region are served by CVP and SWP water supplies. Therefore, the municipal and industrial land uses would be the same under Alternative 3 and the Second Basis of Comparison in the Trinity River Region.

As described in Chapter 5, Surface Water Resources and Water Supplies, CVP and SWP water deliveries to municipal and industrial Sacramento River Water Rights Settlement Contractors and water rights holders would be similar under Alternative 3 and the Second Basis of Comparison. CVP water deliveries to
water service contractors over the long-term conditions would be similar for the North of Delta water users and South of Delta users under Alternative 3 and the Second Basis of Comparison. SWP water deliveries to water contractors over the long-term conditions (without Article 21 water) would be similar under Alternative 3 and the Second Basis of Comparison. Adequate water supplies would be available to support future municipal and industrial land uses projected in existing general plans under Alternative 3 and the Second Basis of Comparison. Therefore, land use in 2030 would be the same under Alternative 3 and the Second Basis of Comparison in the Trinity River, Central Valley, San Francisco Bay Area, Central Coast, and Southern California regions.

13.4.3.5 Alternative 4

The CVP and SWP operations under Alternative 4 are identical to the CVP and SWP operations under the Second Basis of Comparison and Alternative 1. Under Alternative 4, new development and substantial improvements would be prohibited within floodways or within 170 feet of the ordinary high water line of any floodway.

13.4.3.5.1 Alternative 4 Compared to the No Action Alternative

Changes in Land Use

The CVP and SWP operations under Alternative 4 are identical to the CVP and SWP operations under Alternative 1. Therefore, the land use conditions influenced by availability of CVP and SWP water supplies under Alternative 4 would be the same as conditions under Alternative 1.

Under Alternative 4, new development and substantial improvements would be prohibited within floodways or within 170 feet of the ordinary high water line of any floodway. Development within floodways is currently prohibited in accordance with existing general plans and state and regional plans (e.g., requirements of the Delta Protection Commission and Delta Stewardship Council). Structures that either cannot be moved before flood events or that would reduce the flood management function of the floodway are not allowed. It is anticipated that these requirements would continue to be implemented in 2030, to protect the floodways. However, Alternative 4 would include additional restrictions on new development within 170 feet of the ordinary high water line of any floodway. It is anticipated that the provisions under Alternative 4 could result in site-specific parcel changes as compared to the No Action Alternative. However, the development that would have occurred on these parcels could be incorporated within the general plan development plans and guidelines. Therefore, land use conditions under Alternative 4 would be similar to conditions under the No Action Alternative; and would be the same as the impacts described in Section 13.4.3.2.1, Alternative 1 Compared to the No Action Alternative.
13.4.3.5.2 Alternative 4 Compared to the Second Basis of Comparison

*Changes in Land Use*

The CVP and SWP operations under Alternative 4 are identical to the CVP and SWP operations under Second Basis of Comparison. Therefore, the land use conditions influenced by availability of CVP and SWP water supplies under Alternative 4 would be the same as conditions under the Second Basis of Comparison.

Under Alternative 4, new development and substantial improvements would be prohibited within floodways or within 170 feet of the ordinary high water line of any floodway. Development within floodways is currently prohibited in accordance with existing general plans and state and regional plans (e.g., requirements of the Delta Protection Commission and Delta Stewardship Council). Structures that either cannot be moved prior to flood events or that would reduce the flood management function of the floodway are not allowed. It is anticipated that these requirements would continue to be implemented in 2030 to protect the floodways. However, Alternative 4 would include additional restrictions on new development within 170 feet of the ordinary high water line of any floodway. It is anticipated that the provisions under Alternative 4 could result in site-specific parcel changes as compared to the Second Basis of Comparison. However, the development that would have occurred on these parcels could be incorporated within the general plan development plans and guidelines. Therefore, land use conditions under Alternative 4 would be identical to conditions under the Second Basis of Comparison.

13.4.3.6 Alternative 5

The CVP and SWP operations under Alternative 5 are similar to the No Action Alternative with modified Old and Middle River flow criteria and New Melones Reservoir operations. Alternative 5 would include changed water demands for American River water supplies as compared to the No Action Alternative or Second Basis of Comparison. Alternative 5 would provide water supplies of up to 17 TAF/year under a Warren Act Contract for El Dorado Irrigation District and 15 TAF/year under a Warren Act Contract for El Dorado County Water Agency. These demands are not included in the analysis presented in this section of the EIS. A sensitivity analysis comparing the results of the analysis with and without these demands is presented in Appendix 5B of this EIS.

13.4.3.6.1 Alternative 5 Compared to the No Action Alternative

*Changes in Land Use*

No municipal and industrial land uses in the Trinity River Region are served by CVP and SWP water supplies. Therefore, the municipal and industrial land uses would be the same under Alternative 5 and the No Action Alternative in the Trinity River Region.
As described in Chapter 5, Surface Water Resources and Water Supplies, CVP and SWP water deliveries to municipal and industrial Sacramento River Water Rights Settlement Contractors and water rights holders would be similar under Alternative 5 and the No Action Alternative. CVP water deliveries to water service contractors over the long-term conditions would be similar for the North of Delta and South of Delta water users under Alternative 5, compared to the No Action Alternative. SWP water deliveries to water contractors over the long-term conditions (without Article 21 water) would be similar under Alternative 5, compared to the No Action Alternative. Adequate water supplies would be available to support future municipal and industrial land uses projected in existing general plans under Alternative 5 and the No Action Alternative. Therefore, land use in 2030 would be the same under Alternative 5 and the No Action Alternative in the Trinity River, Central Valley, San Francisco Bay Area, Central Coast, and Southern California regions.

13.4.3.6.2 Alternative 5 Compared to the Second Basis of Comparison

Changes in Land Use

No municipal and industrial land uses in the Trinity River Region are served by CVP and SWP water supplies. Therefore, the municipal and industrial land uses would be the same under Alternative 5 and the Second Basis of Comparison in the Trinity River Region.

As described in Chapter 5, Surface Water Resources and Water Supplies, CVP and SWP water deliveries to municipal and industrial Sacramento River Water Rights Settlement Contractors and water rights holders would be similar under the No Action Alternative and the Second Basis of Comparison. CVP water deliveries to water service contractors over the long-term conditions would be similar for the North of Delta water users and 10 percent less for the South of Delta water users under Alternative 5 as compared to the Second Basis of Comparison. SWP water deliveries to water contractors over the long-term conditions (without Article 21 water) would be reduced by 19 percent throughout the SWP service area under the Alternative 5, compared to the Second Basis of Comparison. However, as described in Chapter 19, Socioeconomics, 2030 municipal and industrial water demands would be met through a combination of available CVP and SWP water supplies and other water supplies, including water conservation, water transfers, local and regional surface water and groundwater, recycled water, and desalination. Adequate water supplies would be available to support future municipal and industrial land uses projected in existing general plans under Alternative 5 and the Second Basis of Comparison. Therefore, land use in 2030 would be the same under Alternative 5 and the Second Basis of Comparison in the Trinity River, Central Valley, San Francisco Bay Area, Central Coast, and Southern California regions.

13.4.3.7 Summary of Impact Analysis

The results of the environmental consequences of implementation of Alternatives 1 through 5, compared to the No Action Alternative and the Second Basis of Comparison are presented in Tables 13.1 and 13.2.
### Table 13.1 Comparison of Alternatives 1 through 5 to No Action Alternative

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Potential Change</th>
<th>Consideration for Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative 1</td>
<td>No effects to municipal and industrial and regional land uses</td>
<td>None needed</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>No effects to municipal and industrial and regional land uses</td>
<td>None needed</td>
</tr>
<tr>
<td>Alternative 3</td>
<td>No effects to municipal and industrial and regional land uses</td>
<td>None needed</td>
</tr>
<tr>
<td>Alternative 4</td>
<td>No effects to municipal and industrial and regional land uses</td>
<td>None needed</td>
</tr>
<tr>
<td>Alternative 5</td>
<td>No effects to municipal and industrial and regional land uses</td>
<td>None needed</td>
</tr>
</tbody>
</table>

### Table 13.2 Comparison of No Action Alternative and Alternatives 1 through 5 to Second Basis of Comparison

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Potential Change</th>
<th>Consideration for Mitigation Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Action Alternative</td>
<td>No effects to municipal and industrial and regional land uses</td>
<td>None needed</td>
</tr>
<tr>
<td>Alternative 1</td>
<td>No effects to municipal and industrial and regional land uses</td>
<td>None needed</td>
</tr>
<tr>
<td>Alternative 2</td>
<td>No effects to municipal and industrial and regional land uses</td>
<td>None needed</td>
</tr>
<tr>
<td>Alternative 3</td>
<td>No effects to municipal and industrial and regional land uses</td>
<td>None needed</td>
</tr>
<tr>
<td>Alternative 4</td>
<td>No effects to municipal and industrial and regional land uses</td>
<td>None needed</td>
</tr>
<tr>
<td>Alternative 5</td>
<td>No effects to municipal and industrial and regional land uses</td>
<td>None needed</td>
</tr>
</tbody>
</table>

### 13.4.3.8 Potential Mitigation Measures

Changes in CVP and SWP operations under Alternatives 1 through 5, compared to the No Action Alternative would not result in changes in municipal and industrial land uses or regional lands use plans. Therefore, there would be no adverse impacts to land use and no mitigation measures are required.

### 13.4.3.9 Cumulative Effects Analysis

As described in Chapter 3, Description of Alternatives, the cumulative effects analysis considers projects, programs, and policies that are not speculative; and are based upon known or reasonably foreseeable long-range plans, regulations, operating agreements, or other information that establishes them as reasonably foreseeable.
The No Action Alternative, Alternatives 1 through 5, and Second Basis of Comparison include climate change and sea level rise, implementation of general plans, and completion of ongoing projects and programs (see Chapter 3, Description of Alternatives). The effects of these items were analyzed quantitatively and qualitatively, as described in Section 13.4, Impact Analysis, of this chapter. The discussion provided herein focuses on the qualitative effects of the alternatives and other past, present, and reasonably foreseeable future projects identified for consideration of cumulative effects (see Chapter 3, Description of Alternatives).

13.4.3.9.1 No Action Alternative and Alternatives 1 through 5

Continued coordinated long-term operation of the CVP and SWP under the No Action Alternative would result in reduced CVP and SWP water supply availability, compared to conditions caused by climate change and sea level rise by 2030. These conditions are included in the analysis presented previously.

Future water resource management projects considered in cumulative effects analysis (see Chapter 3, Description of Alternatives), could increase water supply availability, including the following programs:

- Development or expansion of major surface water storage projects, such as the Shasta Lake Water Resources Investigation, Upper San Joaquin River Basin Storage Investigation, North-of-the-Delta Offstream Storage, Los Vaqueros Reservoir Expansion Project, and Delta Wetlands (Reclamation 2013a, 2014a; DWR 2013; Reclamation, CCWD, and Western 2010; SWSD 2011). The Bay Delta Conservation Plan (DWR, Reclamation, USFWS, and NMFS 2013) could improve water supply reliability to CVP and SWP water users in the Central Valley Region, San Joaquin Valley, San Francisco Bay Area Region, Central Coast Region, and Southern California Region.


- Development of recycled water projects for wastewater effluent and stormwater flows (City of Fresno 2011; City of Los Angeles 2005; MWDSC 2010; USGVMWD 2013; WBMWD 2011, 2015; OMWD 2015; EMWD 2014b; PWD 2010; Antelope Valley 2013).

- Development of coastal desalination water projects (BARDP 2015; City of Santa Barbara 2015; CWD 2015; City of Long Beach 2015; City of Huntington Beach 2010; City of Oceanside 2012; City of Carlsbad 2006; WBMWD 2015; MWDSC 2015; SDCWA 2009, 2015).

These projects would result in changes in land use at the construction locations of the new facilities as analyzed in future environmental documentation. At this time, it is not anticipated that water supplies from these new projects would be used for projected land uses in existing general plans. If future projects were
implemented for the purpose of changing existing general plan land uses, separate environmental documentation would be required for the changes to the general plan and the water resources program.

Several ongoing programs could result in changes in flow patterns in the Sacramento and San Joaquin river watersheds and the Delta that could reduce availability of CVP and SWP water deliveries, as well as local and regional water supplies. These projects include renewals of hydroelectric generation permits issued by the Federal Energy Regulatory Commission (FERC 2015) and update of the Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Estuary by the State Water Resources Control Board (SWRCB 2006, 2013). These conditions were not addressed by municipal and industrial water users in the current UWMPs, which projected adequate water supplies in 2030 through a range of water supplies (see Chapter 5, Surface Water Resources and Water Supplies). Reduction in available surface water supplies compared to projected water supplies under the No Action Alternative and Alternatives 1 through 5, could affect the ability for local agencies to continue development in accordance with the general plans.

There would be no adverse land use impacts associated with implementation of the alternatives as compared to the No Action Alternative or the Second Basis of Comparison. Therefore, Alternatives 1 through 5 would not contribute cumulative impacts to the future land use conditions.

### 13.5 References

Alameda County. 2000. *East County Area Plan (Revised by Initiative Nov. 2000)*.


Chapter 13: Land Use


Chapter 13: Land Use

Chapter 13: Land Use


   http://www.morewater.org/about_project/status_timeline.html

   http://www.mwdoc.com/services/dohenydesalhome


_____. 2012. *Nevada County Demographic and Statistical Profile.*


Chapter 13: Land Use


Reclamation et al. (Bureau of Reclamation, California Department of Fish and Game [now known as Department of Fish and Wildlife], and U.S. Fish and Wildlife Service). 2011. Suisun Marsh Habitat Management, Preservation, and Restoration Plan Final Environmental Impact Statement/Environmental Impact Report.


Chapter 13: Land Use

Chapter 13: Land Use

10. _____. 2013. Comprehensive (Phase 2) Review and Update to the Bay-Delta Plan, DRAFT Bay-Delta Plan Workshops Summary Report. January


This page left blank intentionally.