

Chapter 13

1 Land Use

2 13.1 Introduction

3 This chapter describes non-agricultural land use in the study area, and potential
4 changes that could occur as a result of implementing the alternatives evaluated in
5 this Environmental Impact Statement (EIS). Implementation of the alternatives
6 could affect municipal and industrial land uses through potential changes in the
7 Central Valley Project (CVP) and State Water Project (SWP) operation.

8 Changes in agricultural land use and resources are described in Chapter 12,
9 Agricultural Resources. Changes to population are described in Chapter 19,
10 Socioeconomics.

11 13.2 Regulatory Environment and Compliance 12 Requirements

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

19 13.3 Affected Environment

20 This section describes land use conditions potentially affected by the
21 implementation of the alternatives considered in this EIS. Changes in land uses
22 from changes in CVP and SWP operations may occur in the Trinity River, Central
23 Valley, San Francisco Bay Area, Central Coast, and Southern California regions.

24 An extensive range of land uses are within this study area. However, direct or
25 indirect land use effects from implementing the alternatives analyzed in this EIS
26 are related to changes in agricultural, municipal, and industrial land uses from the
27 availability and reliability of CVP and SWP water supplies. The following
28 description of the affected environment is presented at the county-level for
29 agricultural and municipal and industrial land uses. More detailed agricultural
30 land use information is presented in Chapter 12, Agricultural Resources.

31 13.3.1 Trinity River Region

32 The Trinity River Region includes the area in Trinity County along the Trinity
33 River from Trinity Lake to the confluence with the Klamath River; and in
34 Humboldt and Del Norte counties along the Klamath River from the confluence

1 with the Trinity River to the Pacific Ocean. Tribal lands are also included for the
2 entire Trinity River Region.

3 **13.3.1.1 Trinity County**

4 Trinity County encompasses approximately 3,206 square miles in northwestern
5 California. It is bounded on the north by Siskiyou County, on the east by Shasta
6 and Tehama Counties, on the south by Mendocino County, and on the west by
7 Humboldt County. About 76 percent of the land area is within a national forest
8 (Shasta-Trinity, Six Rivers, and Mendocino) and in four wilderness areas (Yolla
9 Bolly-Middle Eel Reserve, Trinity Alps, Chanchellula, and North Fork). Another
10 14 percent is zoned for timber use or held in agriculture land conservation
11 contracts (Trinity County 2012).

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

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

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

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

30 **13.3.1.2 Humboldt County**

31 Humboldt County encompasses approximately 3,570 square miles in
32 northwestern California. It is bounded on the north by Del Norte County, on the
33 east by Siskiyou and Trinity counties, on the south by Mendocino County, and on
34 the west by the Pacific Ocean. About 25 percent of the land area is within the Six
35 Rivers National Forest, Trinity Alps Wilderness Area, Redwood National and
36 State National Park, national wildlife refuges, or other public land. About
37 3 percent of the land area is within state park lands. The Yurok and Hoopa tribal
38 lands represent about 5.6 percent of the land within Humboldt County boundaries
39 (Humboldt County 2012).

40 Most of the population and developed areas are located in western Humboldt
41 County along U.S. Highway 101 (Humboldt County 2012). Incorporated cities
42 and residential lands in unincorporated portions of Humboldt County represent
43 less than 1 percent of the county. Development of communities is relatively

1 limited in Humboldt County because much of the land is within national forests
2 and tribal lands, characterized by steep slopes, or within the coastal zone where
3 new large scale developments are minimized. Timber and agricultural lands are
4 located on over 60 percent of unincorporated areas of Humboldt County.

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

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

15 **13.3.1.3 Del Norte County**

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

25 Del Norte County's primary industries are retail and services (Del Norte County
26 2003).

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

32 **13.3.1.4 Tribal Lands in Trinity River Region**

33 The major federally recognized tribes and tribal lands in the Trinity River Region
34 include the tribal lands of the Hoopa Valley Tribe, Yurok Tribe of the Yurok
35 Reservation, Resighini Rancheria, and Karuk Tribe. Aquatic and wildlife
36 resources associated with the Trinity and Klamath rivers and the surrounding
37 lands are very important to these tribes (NCRWQCB et al. 2009; Yurok Tribe
38 2005; Karuk Tribe 2010).

39 The Hoopa Valley Indian Reservation includes 93,702.73 acres (Hoopa Valley
40 Tribe 2008). The Trinity River flows through the Hoopa Valley Indian
41 Reservation.

1 The Yurok Indian Reservation includes about 55,890 acres within Tribal trust,
2 Tribal fee, allotment, Tribal member fee, nonmember fee, Federal, state, and
3 county lands (Yurok Tribe 2012). The Tribe employs over 250 in the government
4 agency, as well as seasonal workers for fisheries, forestry, fire prevention, and
5 other programs.

6 The Resighini Rancheria includes about 435 acres of land along the south bank
7 of the lower Klamath River and extends from an inland area to the U.S.
8 Highway 101 bridge along the western boundary of the Rancheria (Reclamation
9 2010). The Rancheria is surrounded by the Yurok Indian Reservation
10 (Reclamation 2010; Resighini Rancheria 2014). The community includes tribal
11 offices, a casino, campground, residences, agricultural lands, and open space.

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

20 **13.3.2 Central Valley Region**

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

24 **13.3.2.1 Sacramento Valley**

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

35 **13.3.2.1.1 Shasta County**

36 Shasta County encompasses approximately 3,793 square miles in northern
37 California. It is bounded on the north by Siskiyou County, on the east by Lassen
38 County, on the south by Tehama County, and on the west by Trinity County.
39 Shasta County includes lands within national forests (Shasta-Trinity,
40 Whiskeytown-Shasta-Trinity, and Lassen), Lassen Volcanic National Park, or
41 other federally owned land. State lands include state forest and state parks
42 (Shasta County 2004).

1 The Shasta County General Plan identifies four major categories of land use:
 2 urban, rural, agricultural, and timber (Shasta County 2004). Of Shasta County's
 3 2,416,440 acres, 613,495 acres (25 percent) are designated as timber preserve
 4 zones pursuant to California's Forest Taxation Reform Act of 1976 (Shasta
 5 County 2004). Approximately 169,127 acres (7 percent), are designated as
 6 agricultural preserve lands.

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

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

16 **13.3.2.1.2 Plumas County**

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

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

30 The most recent Plumas County General Plan was adopted in 1984. The county is
 31 in the process of updating its General Plan through 2030 (Plumas County 2012).
 32 Approximately 76 percent of the land in Plumas County is National Forest land
 33 owned and managed by the U.S. Forest Service. The U.S. Forest Service
 34 prepared the Plumas National Forest Land and Resource Management Plan in
 35 1988, to guide management and land use planning decisions in the forest. The
 36 National Forest Land and Resource Management Plan provides a designation for
 37 areas based on established priorities for various resources, including wilderness,
 38 recreation, wildlife, timber, and visual resources (Plumas County 2012).

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

1 **13.3.2.1.3 Tehama County**

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

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

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

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

28 **13.3.2.1.4 Glenn County**

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

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

1 **13.3.2.1.5 Colusa County**

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

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

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

28 **13.3.2.1.6 Butte County**

29 Butte County encompasses 1,680 square miles in northern California. It is
30 bounded on the north by Tehama County, on the east by Plumas County, on the
31 west by Glenn and Colusa counties, and on the south by Sutter and Yuba counties.
32 Butte County includes lands within national forests (Plumas and Lassen),
33 Sacramento National Wildlife Refuge (Butte County 2010). State lands in Butte
34 County include Big Chico Creek and Butte Creek ecological preserves; Table
35 Mountain Reserve; Gray Lodge, Sacramento River, and Oroville wildlife areas;
36 SWP facilities at Lake Oroville and Thermalito Reservoir; and more than
37 750 miles of rivers and streams.

38 The county comprises three general topographical areas: valley region, foothills
39 east of the valley, and mountain region east of the foothills. Each of these regions
40 contains distinct environments with unique wildlife and natural resources.

41 The U.S. Forest Service manages 135,427 acres (12 percent) within Butte County,
42 including portions of the Plumas and Lassen National Forests. The Bureau of
43 Land Management owns and manages 16,832 acres (1.5 percent) in the county

1 (Butte County 2010). Agriculture is the dominant land use within unincorporated
2 Butte County, accounting for approximately 599,040 acres (60 percent of the
3 county area) (Butte County 2010).

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

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

13 **13.3.2.1.7 Sutter County**

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

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

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

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

39 **13.3.2.1.8 Yuba County**

40 Yuba County encompasses approximately 634 acres in northern California. It is
41 bounded on the north by Butte County, on the east by Sierra and Nevada counties,
42 on the west by Sutter County, and on the south by Placer County. Federally

1 owned lands in Yuba County include Tahoe and Plumas National Forests, and the
 2 22,944-acre Beale Air Force Base (Yuba County 2011). The Department of Fish
 3 and Wildlife administers the state Spenceville Wildlife Area.

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

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

14 **13.3.2.1.9 Nevada County**

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

26 Nevada County is predominantly rural (Nevada County 2012). Approximately
 27 91 percent of the county is used for agriculture, timber, or open space. Most of
 28 the population lives in the three incorporated cities in the county (Grass Valley,
 29 Nevada City, and Truckee).

30 **13.3.2.1.10 Placer County**

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

37 Placer County is predominantly rural. Most of the population lives in the area
 38 along Interstate 80 from the City of Auburn to the Sutter and Sacramento county
 39 boundaries. Incorporated cities and towns include Roseville, Rocklin, Lincoln,
 40 Colfax, Loomis, and Auburn (Placer County 2011; Reclamation 2005c; SACOG
 41 2007). Residential land uses range from rural residential areas to medium and
 42 high-density dwelling units in urbanized areas. Commercial land uses are
 43 primarily located in the urbanized portions of the county; although a large

1 concentration of commercial development occurs outside existing urban areas
2 along Interstate 80. Non-urban land uses include agriculture, resource extraction
3 (timber and mining), and public lands and open space uses. The largest amount of
4 public lands within Placer County is located in the eastern half of the county, and
5 is under the jurisdiction of the Bureau of Land Management, U.S. Forest Service,
6 or the Bureau of Reclamation. The CVP water service area within Placer County
7 primarily includes the communities and agricultural areas in the western portion
8 of the county. The portion of the Central Valley Region, Sacramento Valley in
9 Placer County that could be affected by changes in CVP and/or SWP operations
10 and evaluated in this EIS includes CVP water facilities (Folsom Lake), areas
11 along the American River that use the surface waters (including agricultural
12 lands), and CVP water service areas.

13 **13.3.2.1.11 El Dorado County**

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

22 The county includes two specific regions: the Lake Tahoe Basin and the western
23 slopes of the Sierra Nevada (El Dorado County 2003). The CVP water service
24 area provides water to a large portion of the communities and some agricultural
25 areas along the western slope. El Dorado County includes two incorporated
26 cities, Placerville and South Lake Tahoe, which cover 621 acres of land. Other
27 major communities include El Dorado Hills, Cameron Park, Shingle Springs,
28 Rescue, Diamond Springs, Camino, Coloma and Gold Hill, Cool and Pilot Hill,
29 Georgetown and Garden Valley, Pollock Pines, Pleasant Valley, Latrobe,
30 Somerset, and Mosquito. The rural land uses in the county include over
31 259,000 acres of private production forests, 153,472 acres of agricultural lands,
32 and 35,282 acres within the waters of Folsom Lake and Lake Tahoe. The
33 county's two largest crops are wine grapes and apples.

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

38 **13.3.2.1.12 Sacramento County**

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

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

12 The leading agricultural crops in Sacramento County include dairy, wine grapes,
 13 Bartlett pears, field corn, and turkeys (Sacramento County 2010). Agricultural
 14 acreage has declined as urban development has continued. Between 1989 and
 15 2004, the portion of the county designated as agriculture declined from 40 percent
 16 to 34 percent. The southeastern portion of the county remains primarily rural with
 17 smaller communities, such as Herald (Sacramento County 2011).

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

23 **13.3.2.1.13 Tribal Lands in Sacramento Valley**

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

26 *Tribal Lands within the Boundaries of Shasta County*

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

30 *Tribal Lands within the Boundaries of Tehama County*

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

34 *Tribal Lands within the Boundaries of Glenn County*

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

39 *Tribal Lands within the Boundaries of Colusa County*

40 Major federally recognized tribes and tribal lands within the boundaries of Colusa
 41 County include the Cachil Dehe Band of Wintun Indians of the Colusa Indian

1 Community of the Colusa Rancheria, and the Cortina Indian Rancheria of Wintun
2 Indians of California (Colusa County 2011).

3 *Tribal Lands within the Boundaries of Butte County*

4 Major federally recognized tribes and tribal lands within the boundaries of Butte
5 County include the Tyme Maidu of Berry-Creek Rancheria on approximately
6 90 acres, and the Concow Maidu of Mooretown Rancheria on approximately
7 300 acres (Butte County 2010).

8 *Tribal Lands within the Boundaries of Nevada County*

9 Major federally recognized tribes and tribal lands within the boundaries of
10 Nevada County include tribal trust lands of the Shingle Springs Band of Miwok
11 Indians.

12 *Tribal Lands within the Boundaries of Placer County*

13 Major federally recognized tribes and tribal lands within the boundaries of Placer
14 County include tribal trust lands of the United Auburn Indian Community of the
15 Auburn Rancheria of California.

16 *Tribal Lands within the Boundaries of El Dorado County*

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

19 *Tribal Lands within the Boundaries of Sacramento County*

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

23 **13.3.2.2 San Joaquin Valley**

24 The San Joaquin Valley includes Stanislaus, Merced, Madera, San Joaquin,
25 Fresno, Kings, Tulare, and Kern counties. Other counties in this region are not
26 anticipated to be affected by changes in CVP and SWP operations, and are not
27 discussed here. They include Calaveras, Mariposa, and Tuolumne counties.
28 Tribal lands are also described for the entire San Joaquin Valley.

29 **13.3.2.2.1 Stanislaus County**

30 Stanislaus County encompasses approximately 1,521 square miles in central
31 California. It is bounded on the north by San Joaquin County, on the east by
32 Calaveras and Tuolumne counties, on the west by Santa Clara County, and on the
33 south by Merced County. Stanislaus County includes lands within the San
34 Joaquin River National Wildlife Refuge (Stanislaus Council of Governments
35 2007).

36 Land use in the county is primarily agricultural, with nearly 80 percent of the land
37 zoned for general agriculture or in agricultural production (Stanislaus Council of
38 Governments 2007). Over the past 40 years, some portions of the county have
39 been changing from a rural agricultural region to semi-urbanized, especially along
40 major highways and freeways. There are nine incorporated cities in the county,
41 including Ceres, Hughson, Modesto, Newman, Oakdale, Patterson, Riverbank,

1 Turlock, and Waterford. Stanislaus County has adopted community plans for
 2 most of its unincorporated towns, including Crows Landing, Del Rio, Denair,
 3 Hickman, Keyes, Knights Ferry, La Grange, Westley, and Salida (Stanislaus
 4 County 2010, 2012).

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

12 **13.3.2.2.2 Merced County**

13 Merced County encompasses approximately 1,977 square miles in central
 14 California. It is bounded on the north by Stanislaus County, on the east by
 15 Mariposa County, on the south by Fresno and Madera counties, and on the west
 16 by Santa Clara and San Benito counties. Merced County includes federally
 17 owned lands within the San Luis National Wildlife Refuge (Merced County
 18 2013). State lands within the county include San Luis Reservoir State Recreation
 19 Area; Great Valley Grasslands State Park; and the Los Banos, North Grasslands,
 20 and Volta wildlife areas.

21 Merced County includes the six incorporated cities of Atwater, Dos Palos,
 22 Gustine, Livingston, Los Banos, and Merced. The major unincorporated
 23 communities include Delhi, Fox Hills, Franklin, Hilmar, LeGrand, Planada, Santa
 24 Nella, Laguna San Luis, and Winton (Merced County 2013). Unincorporated
 25 land within the county includes approximately 1.2 million acres (98.1 percent of
 26 the land in the county). Agriculture is the primary land use, totaling just over
 27 1 million acres (81.2 percent). Public and quasi-public land is the next largest use
 28 with 131,582 acres or 10.6 percent of the unincorporated County. Commercial
 29 land uses represent 3,025 acres (0.2 percent), industrial uses represent 2,488 acres
 30 (0.2 percent), and mining represents 3,375 acres (0.3 percent). Incorporated cities
 31 account for 24,138 acres (1.9 percent) (Merced County 2012a, 2013). The
 32 Merced County Local Agency Formation Commission policies discourage
 33 annexation of prime agricultural land when significant areas of non-prime
 34 agricultural land are already available. The policies also encourage development
 35 of vacant areas in cities before the annexation and development of outlying areas.
 36 Local Agency Formation Commission policies encourage city annexations that
 37 reflect a planned, logical, and orderly progression of urban expansion and
 38 promote efficient delivery of urban services (Merced County 2012b).

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

1 River that use the surface waters (including agricultural lands), and CVP water
2 service areas.

3 **13.3.2.2.3 Madera County**

4 Madera County encompasses approximately 2,147 square miles in central
5 California. It is bounded on the north by Merced and Mariposa counties, on the
6 east by Mono County, and on the south and west by Fresno County. Madera
7 County includes lands within the Sierra and Inyo national forests (Madera County
8 1995). State lands within the county include the Millerton Lake State
9 Recreation Area.

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

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

23 **13.3.2.2.4 San Joaquin County**

24 San Joaquin County encompasses approximately 1,426 square miles in central
25 California. It is bounded on the north by Sacramento County, on the east by
26 Calaveras and Amador counties, on the south by Stanislaus County, and on the
27 west by Contra Costa and Alameda counties. San Joaquin County includes about
28 6,000 acres of federally owned lands (San Joaquin County 2009).

29 San Joaquin County is currently in the process of updating its General Plan. Most
30 of the county’s land is in agricultural production. Agriculture, the predominant
31 land use, covers 686,109 acres (75 percent) of the county. Residential land is the
32 second largest use in the unincorporated lands, encompassing 40,410 acres
33 (4.4 percent of the county). Residential development in the county is
34 concentrated in existing cities and in adjacent unincorporated communities. San
35 Joaquin County has seven incorporated cities: Stockton, Tracy, Manteca, Escalon,
36 Ripon, Lodi, and Lathrop. Stockton and Tracy are the largest cities in the county.
37 The major unincorporated areas in the county include French Camp, Linden,
38 Lockeford, Morada, Mountain House, New Jerusalem, Thornton, and
39 Woodbridge (San Joaquin County 2009). The incorporated cities account for
40 90,191 acres (approximately 10 percent of the county).

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

1 Slough Pumping Plant, Jones Pumping Plant, Clifton Court, and Banks Pumping
2 Plant), areas along the Delta channels that use the surface waters (including
3 agricultural lands), and CVP water service areas.

4 **13.3.2.2.5 Fresno County**

5 Fresno County encompasses approximately 6,000 square miles in central
6 California. It is bounded on the north by Merced and Madera counties, on the
7 east by Mono and Inyo counties, on the south by Kings and Tulare counties, and
8 on the west by San Benito and Monterey counties. Fresno County includes lands
9 within Millerton Lake, Pine Flat Lake, the Sierra and Sequoia national forests,
10 Sequoia National Monument, and Kings Canyon National Park (Fresno County
11 2000). State lands within the county include the Millerton Lake State Recreation
12 Area, San Joaquin River Parkway, and Mendota Wildlife Area.

13 Fresno County is California's sixth-largest county. Agricultural land uses cover
14 over 48 percent of the county, and resource conservation lands (e.g., forests,
15 parks, and timber preserves) cover approximately 45 percent of the county. The
16 15 incorporated cities and unincorporated communities cover approximately
17 5 percent of the county (Fresno County 2000). Development constraints within
18 the county are primarily caused by lack of funding for infrastructure
19 improvement, availability of water supplies, air quality regulations, and physical
20 limitations, especially in the mountains and eastern foothills. The incorporated
21 communities include Clovis, Coalinga, Firebaugh, Fowler, Fresno, Huron,
22 Kerman, Kingsburg, Mendota, Orange Cove, Parlier-West Parlier, Reedley,
23 Sanger, San Joaquin, and Selma (Fresno County 2000). Major unincorporated
24 communities include Biola, Caruthers, Del Rey, Friant, Lanare, Laton, Riverdale,
25 Shaver Lake, and Tranquility.

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

31 **13.3.2.2.6 Kings County**

32 Kings County encompasses approximately 1,280 square miles in south central
33 California. It is bounded on the north by Fresno County, on the east by Tulare
34 County, on the south by Kern County, and on the west by Monterey County.
35 Kings County includes lands within Naval Air Station Lemoore (Kings County
36 2009).

37 Land use is predominantly agricultural, with more than 90 percent of the county
38 designated for agricultural uses. Incorporated cities in Kings County include
39 Avenal, Corcoran, Hanford, and Lemoore. Residential land uses in
40 unincorporated areas and special districts cover less than 1 percent of the county's
41 total acreage including for the communities of Armona, Home Garden, Kettleman
42 City, and Stratford (Kings County 2009).

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

4 **13.3.2.2.7 Tulare County**

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

12 Agricultural land uses cover more than 2,150 square miles (approximately
13 44 percent) of the county. Lands classified as open space (i.e., national forests,
14 monuments, and parks; wilderness areas; and County parks) make up 25 percent
15 of the land use in the county. Less than 3 percent of the county lands are in the
16 incorporated cities of Dinuba, Exeter, Farmersville, Lindsay, Porterville, Tulare,
17 Visalia, and Woodlake (Tulare County 2010). Less than 2 percent of the county
18 is designated for unincorporated residential areas, including the major
19 communities of Alpaugh, Cutler, Ducor, Earlimart, East Oros, Goshen, Ivanhoe,
20 Lemoncove, London, Oros, Pixley, Plainview, Poplar-Cotton Center, Richgrove,
21 Springville, Strathmore, Terra Bella, Three Rivers, Tipton, Traver, and
22 Woodville.

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

26 **13.3.2.2.8 Kern County**

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

35 The county's geography includes mountainous regions, agricultural lands, and
36 deserts. There are 11 incorporated cities in the county, including Arvin,
37 Bakersfield, California City, Delano, Maricopa, McFarland, Ridgecrest, Shafter,
38 Taft, Tehachapi, and Wasco (Kern County 2009). The major unincorporated
39 communities include Kernville, Lake Isabella, Inyokern, Mojave, Boron,
40 Rosamond, Golden Hills, Stallion Springs, and Buttonwillow. Agricultural land
41 uses are designated for approximately 85 percent of the unincorporated lands that
42 are under the jurisdiction of the county (not including lands under the jurisdiction

1 of the Federal, state, tribes, or incorporated cities). Less than 6 percent of the
2 unincorporated lands under county jurisdiction are designated for residential uses.

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

6 **13.3.2.2.9 Tribal Lands in San Joaquin Valley**

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

10 *Tribal Lands within the Boundaries of Madera County*

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

15 *Tribal Lands within the Boundaries of Fresno County*

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

19 *Tribal Lands within the Boundaries of Kings County*

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

23 *Tribal Lands within the Boundaries of Tulare County*

24 Major federally recognized tribes and tribal lands within the boundaries of Tulare
25 County includes the Tule River Indian Tribe of the Tule River Reservation of the
26 Yokut Indians about 20 miles east of Porterville and covers 55,356 acres (SDSU
27 2013).

28 **13.3.2.3 Delta and Suisun Marsh**

29 The Delta and Suisun Marsh includes Sacramento, Yolo, Solano, San Joaquin,
30 and Contra Costa counties. Sacramento County is discussed in the Sacramento
31 Valley subsection because more of the land that could be affected by changes in
32 CVP and SWP long-term operations is located within the Sacramento Valley than
33 in the Delta and Suisun Marsh geographical areas. San Joaquin County is
34 discussed in the San Joaquin Valley subsection because more of the land that
35 could be affected by changes in CVP and SWP long-term operations is located
36 within the San Joaquin Valley than in the Delta and Suisun Marsh geographical
37 areas. Contra Costa County is discussed as part of the San Francisco Bay Region
38 because more of the land that could be affected by changes in CVP and SWP
39 long-term operations is located within the San Francisco Bay Region than in the
40 Delta and Suisun Marsh geographical areas.

41 Tribal lands are also described for Yolo County.

1 **13.3.2.3.1 Yolo County**

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

7 Residential areas in Yolo County primarily occur in the county’s four
8 incorporated cities (Davis, West Sacramento, Winters, and Woodland) that
9 comprise approximately 32,325 acres (5 percent) of county lands (Yolo County
10 2009). Yolo County includes areas within the Delta, including the City of West
11 Sacramento and the community of Clarksburg. The unincorporated portion of the
12 county encompasses 35 community areas, including Capay, Clarksburg,
13 Dunnigan, Esparto, Guinda, Knights Landing, Madison, Monument Hills,
14 Rumsey, Yolo, and Zamora.

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

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

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

36 **13.3.2.3.2 Solano County**

37 Solano County encompasses approximately 910 square miles in northern
38 California. It is bounded on the north by Yolo County, on the east by Sutter and
39 Sacramento counties, on the south by Contra Costa County, and on the west by
40 Napa County. Solano County includes federally owned lands within Travis Air
41 Force Base (Solano County 2008). State lands include areas within Suisun Marsh
42 and the Cache Slough area of Yolo Bypass.

1 Solano County's General Plan was adopted in 2008. Approximately 81,678 acres
 2 of the county (14 percent of the total land area), lies within seven incorporated
 3 cities: Benicia, Dixon, Fairfield, Rio Vista, Suisun City, Vacaville, and Vallejo.
 4 Urban development is generally concentrated within the incorporated cities or
 5 surrounding suburban communities. Travis Air Force Base is located on
 6 approximately 7,100 acres (1 percent of the land within the county). In 2006,
 7 agriculture accounted for 56.5 percent of the total land use in Solano County
 8 (Solano County 2008). The southern section of the Yolo Bypass, as described
 9 under the Yolo County subsection, is located within Solano County.

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

15 **13.3.2.3.3 Tribal Lands in Delta and Suisun Marsh**

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

19 *Tribal Lands within the Boundaries of Yolo County*

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

23 **13.3.3 San Francisco Bay Area Region**

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

27 **13.3.3.1.1 Napa County**

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

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

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

1 **13.3.3.1.2 Contra Costa County**

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

8 Over 40 percent of the county's land is in agricultural production, or about
9 200,370 acres. Residential land is the second largest use in the county,
10 encompassing approximately 122,100 acres (25.4 percent of the county).
11 Approximately 46,700 acres (9 percent of the land within the county), are within
12 surface waters (Contra Costa County 2005).

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

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

27 **13.3.3.1.3 Alameda County**

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

33 Western Alameda County and the portions of the Livermore-Amador Valley are
34 heavily urbanized. The incorporated cities include Oakland, which is the County
35 seat; Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward,
36 Livermore, Newark, Piedmont, Pleasant, San Leandro, and Union City. The
37 unincorporated area of the County covers approximately 277,760 acres
38 (59 percent) of the total land area, includes the unincorporated areas of Castro
39 Valley, Eden Area, and (Alameda County Community Development Agency
40 2010; Alameda County 2000, 2009). Large portions of the unincorporated areas
41 located to the east of Castro Valley and within the Livermore-Amador Valley hills
42 include agricultural and open space lands which are not served by the CVP or
43 SWP water supplies.

1 The portion of the San Francisco Bay Area Region in Alameda County that could
2 be affected by changes in CVP and/or SWP operations and evaluated in this EIS
3 includes CVP and SWP facilities (including the SWP South Bay Aqueduct),
4 reservoirs that store CVP or SWP water, and CVP and SWP water service areas.

5 **13.3.3.1.4 Santa Clara County**

6 Santa Clara County encompasses approximately 1,306 square miles in northern
7 California. It is bounded on the north by Alameda County, on the east by
8 Stanislaus and Merced counties, on the south by San Benito County, and on the
9 west by San Mateo and Santa Cruz counties. Santa Clara County includes
10 federally owned and state-owned lands throughout the county, including
11 approximately 87,000 acres within Henry W. Coe State Park (Santa Clara County
12 1994, 2012).

13 Approximately 83 percent of the county's population resides in the
14 15 incorporated cities. The incorporated cities include Campbell, Cupertino,
15 Gilroy, Los Altos, Los Altos Hills, Los Gatos, Milpitas, Monte Sereno, Morgan
16 Hill, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale.
17 The southern portion of the county near Gilroy and Morgan Hill is predominantly
18 rural, with low-density residential developments scattered though the valley and
19 foothill areas (Santa Clara County 1994, 2012).

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

25 **13.3.3.1.5 San Benito County**

26 San Benito County encompasses approximately 1,386 square miles in central
27 California. It is bounded on the north by Santa Clara County, on the east by
28 Merced and Fresno counties, and on the south and west by Monterey County.
29 San Benito County includes federally owned and state-owned lands throughout
30 the county, including approximately 26,000 acres within Pinnacles National
31 Monument, over 105,403 acres owned by Bureau of Land Management, and over
32 8,800 acres associated with the Hollister Hills State Vehicular Recreation Area
33 and San Juan Bautista State Historic Park (San Benito County 2010, 2013).

34 San Benito County has approximately 882,675 acres of unincorporated lands
35 (nearly 99.5 percent of the total land area). The incorporated cities of Hollister
36 and San Juan Bautista account for approximately 4,044 acres (0.5 percent of the
37 county land area). Agriculture is the predominant land use, totaling 747,409 acres
38 (84 percent of the county) (San Benito County 2010, 2013).

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

1 **13.3.4 Central Coast Region**

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

5 **13.3.4.1 San Luis Obispo County**

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

15 Land uses in the County are predominantly rural and agricultural with over
16 1,672,000 acres in agricultural and rural land uses (83 percent of the total county
17 lands). Incorporated cities include Arroyo Grande, Atascadero, Grover Beach,
18 Morro Bay, Paso Robles, Pismo Beach, and San Luis Obispo. Major
19 unincorporated communities include Avila, California Valley, Creston Village,
20 Edna Village, Heritage Ranch, Los Ranchos, Nipoma, Oak Shores, Oceano, San
21 Miguel, Santa Margarita, and Templeton (San Luis Obispo County 2013).

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

26 **13.3.4.2 Santa Barbara County**

27 Santa Barbara County encompasses approximately 2,744 square miles in central
28 California. It is bounded on the north by San Luis Obispo, on the east by Ventura
29 County, and on the south and west by the Pacific Ocean. Federally owned land in
30 Santa Barbara County includes 629,120 acres in the Los Padres National Forest,
31 98,560 acres in the Vandenberg Air Force Base, Channel Islands National Park,
32 and Guadalupe-Nipomo Dunes National Wildlife Refuge. The state-owned lands
33 include the University of California at Santa Barbara, Sedgwick Reserve, La
34 Purissima Mission State Park and other state parks, and Burton Mesa Ecological
35 Reserve (Santa Barbara County 2009; SBCAG 2013).

36 Agricultural is the predominant land use in the county with over 1,440,000 acres
37 (82 percent of the land) (Santa Barbara County 2009; SBCAG 2013). Santa
38 Barbara County includes eight incorporated cities, Buellton, Carpinteria, Goleta,
39 Guadalupe, Lompoc, Santa Barbara, Santa Maria, and Solvang. Less than
40 3 percent of the County is within incorporated cities. The major unincorporated
41 communities include Cuyuama, Los Alamos, Los Olivos, Mission Hills,
42 Montecito, New Cayamu, Orcutt, Summerland, and Vandenberg Village. The
43 portion of the Central Coastal Region, in Santa Barbara County, that could be

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

5 **13.3.4.3 Tribal Lands in Central Coast Region**

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

9 *Tribal Lands within the Boundaries of Santa Barbara County*

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

14 **13.3.5 Southern California Region**

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

18 **13.3.5.1 Ventura County**

19 Ventura County encompasses approximately 1,873 square miles in southern
 20 California. It is bounded on the north by Kern County, on the east and south by
 21 Los Angeles County, and on the west by Santa Barbara County and the Pacific
 22 Ocean. Ventura County includes federally owned and state-owned lands
 23 throughout the county, including 550,211 acres in Los Padres National Forest,
 24 Chumash and Sespe wilderness area, 4,331 acres at the Point Mugu Naval Air
 25 Station, 670 acres at the California State University Channel Islands, and over
 26 410 acres in state beach parks (Ventura County 2013).

27 Ventura County has 10 incorporated cities, including Camarillo, Fillmore,
 28 Moorpark, Ojai, Oxnard, Port Hueneme, Santa Paula, San Buenaventura, Simi
 29 Valley, and Thousand Oaks (Ventura County 2013). Major unincorporated
 30 communities within the county include Bell Canyon, Box Canyon, Camarillo
 31 Heights, Del Norte, El Rio, Hidden Valley, Lake Sherwood, Matilija Canyon,
 32 Montalvo, Oak Park, Ojai Valley, Piru, Saticoy, and Somis (Ventura County
 33 2005).

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

38 **13.3.5.2 Los Angeles County**

39 Los Angeles County encompasses approximately 4,083 square miles in northern
 40 California. It is bounded on the north by Kern County, on the east by San
 41 Bernardino County, on the south by Orange County, and on the west by Ventura

1 County and the Pacific Ocean. Los Angeles County includes federally owned and
2 state-owned lands throughout the county, including nearly 650,000 acres in Los
3 Padres and Angeles national forests, portions of Edwards Air Force Base, over
4 29,000 acres of other federally owned open space (including wilderness areas),
5 and approximately 50,893 acres of state-owned land, including Hungry Valley
6 State Vehicular Recreation Area (Los Angeles County 2011).

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

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

17 **13.3.5.3 Orange County**

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

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

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

29 **13.3.5.4 San Diego County**

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

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

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

6 **13.3.5.5 Riverside County**

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

16 Residential land use accounts for approximately 184,000 acres, nearly 57 percent
 17 of which are within incorporated cities. Approximately 1,313,000 acres
 18 (28 percent) is in open space, recreation, agriculture, and wildland preservation
 19 (RCIP 2000).

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

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

34 **13.3.5.6 San Bernardino County**

35 San Bernardino County encompasses approximately 20,106 square miles in
 36 southern California. It is bounded on the north by Inyo County, on the east by the
 37 state of Nevada, on the south by Riverside County, and on the west by Kern, Los
 38 Angeles, and Orange counties. Most of the land in San Bernardino County is
 39 federally owned and state-owned lands, including approximately 10,500,000 acres
 40 (81 percent of the county) (San Bernardino County 2007, 2012). The federally
 41 owned lands include 28 Bureau of Land Management wilderness areas
 42 (approximately 47 percent of the total county), San Bernardino and Angeles
 43 National Forests (676,666 and 655,387 acres, respectively), Mojave National

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

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

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

22 **13.3.5.7 Tribal Lands in Southern California Region**

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

26 *Tribal Lands within the Boundaries of San Diego County*

27 Major federally recognized tribes and tribal lands within the boundaries of San
28 Diego County includes lands of the Capitan Grande Band of Diegueno Mission
29 Indians of California (Barona Reservation and Viejas Reservation), Cahuilla Band
30 of Mission Indians of the Cahuilla Reservation, Campo Band of Diegueno
31 Mission Indians of the Campo Indian Reservation, Ewiiapaayp Band of
32 Kumeyaay Indians, Inaja Band of Diegueno Mission Indians of the Inaja and
33 Cosmit Reservation, Jamul Indian Village of California, La Jolla Band of Luiseno
34 Indians, La Posta Band of Diegueno Mission Indians of the La Posta Indian
35 Reservation, Los Coyotes Band of Cahuilla and Cupeno Indians, Manzanita Band
36 of Diegueno Mission Indians of the Manzanita Reservation, Mesa Grade Band of
37 Diegueno Mission Indians of the Mesa Grande Reservation, Pala Band of Luiseno
38 Mission Indians of the Pala Reservation, Pauma Band of Luiseno Mission Indians
39 of the Pauma & Yuima Reservation, Rincon Band of Luiseno Indians of the
40 Rincon Reservation, San Pasqual Band of Diegueno Mission Indians of
41 California, Iipay Nation of Santa Ysabel, and Sycuan Band of Kumeyaay Nation.

1 *Tribal Lands within the Boundaries of Riverside County*
 2 Major federally recognized tribes and tribal lands within the boundaries of
 3 Riverside County include lands of the Agua Caliente Band of Cahuilla Indians of
 4 the Agua Caliente Reservation, Augustine Band of Cahuilla Indians, Cabazon
 5 Band of Mission Indians, Cahuilla Band of Mission Indians of the Cahuilla
 6 Reservation, Morongo Band of Mission Indians, Pechanga Band of Luiseno
 7 Mission Indians of the Pechanga Reservation, Ramona Band of Cahuilla, Santa
 8 Rosa Band of Cahuilla Indians, Soboba Band of Luiseno Indians, Torres-Martinez
 9 Desert Cahuilla Indians, Twenty-Nine Palms Band of Mission Indians of
 10 California, and Colorado River Indian Tribes of the Colorado River Indian
 11 Reservation (RCIP 2000).

12 *Tribal Lands within the Boundaries of San Bernardino County*
 13 Major federally recognized tribes and tribal lands within the boundaries of San
 14 Bernardino County include the lands of the San Manuel Band of Mission Indians
 15 and the Twenty-Nine Palms Band of Mission Indians of California (SDSU 2013).
 16 The Chemehuevi Indian Tribe of the Chemehuevi Reservation is also located in
 17 San Bernardino County near the Colorado River.

18 **13.4 Impact Analysis**

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

22 **13.4.1 Potential Mechanisms for Change and Analytical Tools**

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

27 **13.4.1.1 Changes in Land Uses**

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

38 Availability of CVP and SWP water supplies were analyzed using CalSim II
 39 model output (see Chapter 5, Surface Water Resources and Water Supplies).
 40 Most of the CVP and SWP municipal and industrial water users prepared Urban

1 Water Management Plans (UWMPs) that project availability of water supplies to
2 support land uses in 2030. That information was used with projected CVP and
3 SWP water supply availability under each of the alternatives to determine if
4 projected municipal and industrial water demands could be met in 2030 using the
5 CWEST model, as described in Chapter 19, Socioeconomics. The results of the
6 CWEST model indicated that municipal and industrial water demands of CVP
7 and SWP water users in the Central Valley, San Francisco Bay Area, Central
8 Coast, and Southern California regions would be met through a combination of
9 water conservation, available CVP and SWP water supplies, local and regional
10 surface water supplies, groundwater, recycled water, and, in some cases,
11 desalination.

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

29 The No Action Alternative, Alternatives 1 through 5, and Second Basis of
30 Comparison include restoration of more than 10,000 acres of intertidal and
31 associated subtidal wetlands in Suisun Marsh and Cache Slough; 17,000 to
32 20,000 acres of seasonal floodplain restoration in the Yolo Bypass; and continued
33 delivery of refuge water supplies under the Central Valley Project Improvement
34 Act, as described in Chapter 3, Description of Alternatives. Land uses in 2030
35 due to implementation of these programs would be consistent between all
36 alternatives and the Second Basis of Comparison. Therefore, this EIS does not
37 analyze changes due to these programs.

38 **13.4.1.2 Effects Related to Cross Delta Water Transfers**

39 Cross Delta water transfers involving the CVP and SWP facilities or water
40 supplies would be required to be implemented in accordance with all existing
41 regulations and requirements, including not causing adverse impacts to other
42 water users in accordance with the requirements of Reclamation, DWR, and the
43 State Water Resources Control Board. It is anticipated that water transfers would
44 continue under all alternatives to provide water supplies to agricultural, municipal
45 and industrial, and wildlife refuges under all alternatives and the Second Basis of

1 Comparison in a similar manner. Transfers for municipal and industrial water
 2 users would be one of several water supply sources to meet the future water
 3 demands in Year 2030. If the availability of transferred water is reduced, it is
 4 anticipated that other water supplies (e.g., recycled water and desalination) would
 5 be increased, as described in the UWMPs for 2030 water demands.

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

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

24 **13.4.2 Conditions in Year 2030 without Implementation of** 25 **Alternatives 1 through 5**

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

29 **13.4.2.1 No Action Alternative**

30 The impact analysis in this EIS is based upon the comparison of the alternatives to
 31 the No Action Alternative and the Second Basis of Comparison in the Year 2030.
 32 Many of the changed conditions would occur in the same manner under both the
 33 No Action Alternative and the Second Basis of Comparison (e.g., climate change,
 34 sea level rise, projected development under existing general plans, and
 35 implementation of reasonable and foreseeable projects). Due to these changes,
 36 especially climate change and sea level rise, it is anticipated that CVP and SWP
 37 water supply availability would be less than under recent conditions (described in
 38 Chapter 5, Surface Water Resources and Water Supplies). However, it is
 39 anticipated that projected land uses would occur by 2030 with implementation of
 40 water conservation programs and the development of other water supplies,
 41 including ongoing recycled water programs, desalination, and groundwater use.

1 By 2030 under the No Action Alternative and the Second Basis of Comparison, it
2 is assumed that ongoing programs would result in restoration of more than
3 10,000 acres of intertidal and associated subtidal wetlands in Suisun Marsh and
4 Cache Slough; and 17,000 to 20,000 acres of seasonal floodplain restoration in the
5 Yolo Bypass.

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

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

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

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

38 **13.4.3 Evaluation of Alternatives**

39 As described in Chapter 4, Approach to Environmental Analysis, Alternatives 1
40 through 5 have been compared to the No Action Alternative; and the No Action
41 Alternative and Alternatives 1 through 5 have been compared to the Second Basis
42 of Comparison.

1 During review of the numerical modeling analyses used in this EIS, an error was
 2 determined in the CalSim II model assumptions related to the Stanislaus River
 3 operations for the Second Basis of Comparison, Alternative 1, and Alternative 4
 4 model runs. Appendix 5C includes a comparison of the CalSim II model run
 5 results presented in this chapter and CalSim II model run results with the error
 6 corrected. Appendix 5C also includes a discussion of changes in the comparison
 7 of the following alternative analysis:

- 8 • No Action Alternative compared to the Second Basis of Comparison
- 9 • Alternative 1 compared to the No Action Alternative
- 10 • Alternative 3 compared to the Second Basis of Comparison
- 11 • Alternative 5 compared to the Second Basis of Comparison.

12 **13.4.3.1 No Action Alternative**

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

15 **13.4.3.1.1 Changes in Land Use**

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

20 As described in Chapter 5, Surface Water Resources and Water Supplies, CVP
 21 and SWP water deliveries to municipal and industrial Sacramento River Water
 22 Rights Settlement Contractors and water rights holders would be similar under the
 23 No Action Alternative and the Second Basis of Comparison. CVP water
 24 deliveries to water service contractors over the long-term conditions would be
 25 6 percent less for the North of Delta water users and 10 percent less for the South
 26 of Delta users under the No Action Alternative, compared to the Second Basis of
 27 Comparison. SWP water deliveries to water contractors over the long-term
 28 conditions (without Article 21 water) would be reduced by 18 percent throughout
 29 the SWP service area under the No Action Alternative, compared to the Second
 30 Basis of Comparison. However, as described in Chapter 19, Socioeconomics,
 31 2030 municipal and industrial water demands would be met through a
 32 combination of available CVP and SWP water supplies and other water supplies,
 33 including water conservation, water transfers, local and regional surface water and
 34 groundwater, recycled water, and desalination. Adequate water supplies would be
 35 available to support future municipal and industrial land uses projected in existing
 36 general plans under the No Action Alternative and the Second Basis of
 37 Comparison. Therefore, land use in 2030 would be the same under the No Action
 38 Alternative and the Second Basis of Comparison in the Trinity River, Central
 39 Valley, San Francisco Bay Area, Central Coast, and Southern California regions.

40 **13.4.3.2 Alternative 1**

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

1 use conditions under the Second Basis of Comparison, Alternative 1 is only
2 compared to the No Action Alternative.

3 **13.4.3.2.1 Alternative 1 Compared to the No Action Alternative**

4 *Change in Land Use*

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

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

28 **13.4.3.2.2 Alternative 1 Compared to the Second Basis of Comparison**

29 Alternative 1 is identical to the Second Basis of Comparison.

30 **13.4.3.3 Alternative 2**

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

34 **13.4.3.3.1 Alternative 2 Compared to the Second Basis of Comparison**

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

38 **13.4.3.4 Alternative 3**

39 The CVP and SWP operations under Alternative 3 are similar to the Second Basis
40 of Comparison with modified Old and Middle River flow criteria and New
41 Melones Reservoir operations.

1 Alternative 3 would include changed water demands for American River water
2 supplies as compared to the No Action Alternative or Second Basis of
3 Comparison. Alternative 3 would provide water supplies of up to 17 thousand
4 acre feet (TAF)/year under a Warren Act Contract for El Dorado Irrigation
5 District and 15 TAF/year under a Warren Act Contract for El Dorado County
6 Water Agency. These demands are not included in the analysis presented in this
7 section of the EIS. A sensitivity analysis comparing the results of the analysis
8 with and without these demands is presented in Appendix 5B of this EIS.

9 **13.4.3.4.1 Alternative 3 Compared to the No Action Alternative**

10 *Changes in Land Use*

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

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

34 **13.4.3.4.2 Alternative 3 Compared to the Second Basis of Comparison**

35 *Changes in Land Use*

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

40 As described in Chapter 5, Surface Water Resources and Water Supplies, CVP
41 and SWP water deliveries to municipal and industrial Sacramento River Water
42 Rights Settlement Contractors and water rights holders would be similar under
43 Alternative 3 and the Second Basis of Comparison. CVP water deliveries to

1 water service contractors over the long-term conditions would be similar for the
2 North of Delta water users and South of Delta users under Alternative 3 and the
3 Second Basis of Comparison. SWP water deliveries to water contractors over the
4 long-term conditions (without Article 21 water) would be similar under
5 Alternative 3 and the Second Basis of Comparison. Adequate water supplies
6 would be available to support future municipal and industrial land uses projected
7 in existing general plans under Alternative 3 and the Second Basis of
8 Comparison. Therefore, land use in 2030 would be the same under Alternative 3
9 and the Second Basis of Comparison in the Trinity River, Central Valley, San
10 Francisco Bay Area, Central Coast, and Southern California regions.

11 **13.4.3.5 Alternative 4**

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

17 **13.4.3.5.1 Alternative 4 Compared to the No Action Alternative**

18 *Changes in Land Use*

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

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

1 **13.4.3.5.2 Alternative 4 Compared to the Second Basis of Comparison**

2 *Changes in Land Use*

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

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

24 **13.4.3.6 Alternative 5**

25 The CVP and SWP operations under Alternative 5 are similar to the No Action
26 Alternative with modified Old and Middle River flow criteria and New Melones
27 Reservoir operations.

28 Alternative 5 would include changed water demands for American River water
29 supplies as compared to the No Action Alternative or Second Basis of
30 Comparison. Alternative 5 would provide water supplies of up to 17 TAF/year
31 under a Warren Act Contract for El Dorado Irrigation District and 15 TAF/year
32 under a Warren Act Contract for El Dorado County Water Agency. These
33 demands are not included in the analysis presented in this section of the EIS. A
34 sensitivity analysis comparing the results of the analysis with and without these
35 demands is presented in Appendix 5B of this EIS.

36 **13.4.3.6.1 Alternative 5 Compared to the No Action Alternative**

37 *Changes in Land Use*

38 No municipal and industrial land uses in the Trinity River Region are served by
39 CVP and SWP water supplies. Therefore, the municipal and industrial land uses
40 would be the same under Alternative 5 and the No Action Alternative in the
41 Trinity River Region.

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

15 **13.4.3.6.2 Alternative 5 Compared to the Second Basis of Comparison**

16 *Changes in Land Use*

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

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

41 **13.4.3.7 Summary of Impact Analysis**

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

1 **Table 13.1 Comparison of Alternatives 1 through 5 to No Action Alternative**

Alternative	Potential Change	Consideration for Mitigation Measures
Alternative 1	No effects to municipal and industrial and regional land uses	None needed
Alternative 2	No effects to municipal and industrial and regional land uses	None needed
Alternative 3	No effects to municipal and industrial and regional land uses	None needed
Alternative 4	No effects to municipal and industrial and regional land uses	None needed
Alternative 5	No effects to municipal and industrial and regional land uses	None needed

2 **Table 13.2 Comparison of No Action Alternative and Alternatives 1 through 5 to**
 3 **Second Basis of Comparison**

Alternative	Potential Change	Consideration for Mitigation Measures
No Action Alternative	No effects to municipal and industrial and regional land uses	None needed
Alternative 1	No effects to municipal and industrial and regional land uses	None needed
Alternative 2	No effects to municipal and industrial and regional land uses	None needed
Alternative 3	No effects to municipal and industrial and regional land uses	None needed
Alternative 4	No effects to municipal and industrial and regional land uses	None needed
Alternative 5	No effects to municipal and industrial and regional land uses	None needed

4 **13.4.3.8 Potential Mitigation Measures**

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

9 **13.4.3.9 Cumulative Effects Analysis**

10 As described in Chapter 3, Description of Alternatives, the cumulative effects
 11 analysis considers projects, programs, and policies that are not speculative; and
 12 are based upon known or reasonably foreseeable long-range plans, regulations,
 13 operating agreements, or other information that establishes them as reasonably
 14 foreseeable.

1 The No Action Alternative, Alternatives 1 through 5, and Second Basis of
2 Comparison include climate change and sea level rise, implementation of general
3 plans, and completion of ongoing projects and programs (see Chapter 3,
4 Description of Alternatives). The effects of these items were analyzed
5 quantitatively and qualitatively, as described in Section 13.4, Impact Analysis, of
6 this chapter. The discussion provided herein focuses on the qualitative effects of
7 the alternatives and other past, present, and reasonably foreseeable future projects
8 identified for consideration of cumulative effects (see Chapter 3, Description of
9 Alternatives).

10 **13.4.3.9.1 No Action Alternative and Alternatives 1 through 5**

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

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

- 18 • Development or expansion of major surface water storage projects, such as the
19 Shasta Lake Water Resources Investigation, Upper San Joaquin River Basin
20 Storage Investigation, North-of-the-Delta Offstream Storage, Los Vaqueros
21 Reservoir Expansion Project, and Delta Wetlands (Reclamation 2013a, 2014a;
22 DWR 2013; Reclamation, CCWD, and Western 2010; SWSD 2011). The Bay
23 Delta Conservation Plan (DWR, Reclamation, USFWS, and NMFS 2013)
24 could improve water supply reliability to CVP and SWP water users in the
25 Central Valley Region, San Joaquin Valley, San Francisco Bay Area Region,
26 Central Coast Region, and Southern California Region.
- 27 • Development or expansion of groundwater banks (City of Roseville 2012;
28 MORE 2015; NSJCGBA 2007; SEWD 2012; MWDSC 2010; KRCD 2012;
29 BVWSD 2015; City of Los Angeles 2010, 2013; Los Angeles County 2013;
30 City of San Diego 2009a, 2009b; RCWD 2011, 2012; Reclamation 2011;
31 EMWD 2014a; JCSD et al. 2010).
- 32 • Development of recycled water projects for wastewater effluent and
33 stormwater flows (City of Fresno 2011; City of Los Angeles 2005; MWDSC
34 2010; USGVMWD 2013; WBMWD 2011, 2015; OMWD 2015; EMWD
35 2014b; PWD 2010; Antelope Valley 2013).
- 36 • Development of coastal desalination water projects (BARDP 2015; City of
37 Santa Barbara 2015; CWD 2015; City of Long Beach 2015; City of
38 Huntington Beach 2010; City of Oceanside 2012; City of Carlsbad 2006;
39 WBMWD 2015; MWDOC 2015; SDCWA 2009, 2015).

40 These projects would result in changes in land use at the construction locations of
41 the new facilities as analyzed in future environmental documentation. At this
42 time, it is not anticipated that water supplies from these new projects would be
43 used for projected land uses in existing general plans. If future projects were

1 implemented for the purpose of changing existing general plan land uses, separate
 2 environmental documentation would be required for the changes to the general
 3 plan and the water resources program.

4 Several ongoing programs could result in changes in flow patterns in the
 5 Sacramento and San Joaquin river watersheds and the Delta that could reduce
 6 availability of CVP and SWP water deliveries, as well as local and regional water
 7 supplies. These projects include renewals of hydroelectric generation permits
 8 issued by the Federal Energy Regulatory Commission (FERC 2015) and update of
 9 the Water Quality Control Plan for the San Francisco Bay/Sacramento–San
 10 Joaquin Delta Estuary by the State Water Resources Control Board (SWRCB
 11 2006, 2013). These conditions were not addressed by municipal and industrial
 12 water users in the current UWMPs, which projected adequate water supplies in
 13 2030 through a range of water supplies (see Chapter 5, Surface Water Resources
 14 and Water Supplies). Reduction in available surface water supplies compared to
 15 projected water supplies under the No Action Alternative and Alternatives 1
 16 through 5, could affect the ability for local agencies to continue development in
 17 accordance with the general plans.

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

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