16.1 Environmental Setting/Affected Environment

This section discusses the socioeconomics study area (the area in which impacts may occur), which comprises Sacramento, San Joaquin, Yolo, Solano, and Contra Costa Counties, collectively referred to as the Delta region in this chapter. This area includes the entire Plan Area (the area covered by the BDCP); which is largely formed by the statutory borders of the Delta, along with areas in Suisun Marsh and the Yolo Bypass. The Delta is a maze of islands and channels at the confluence of the Sacramento and San Joaquin rivers. The Delta is located within portions of Contra Costa, Sacramento, San Joaquin, Solano, and Yolo counties and includes portions or all of the cities of Sacramento, Isleton, Elk Grove, West Sacramento, Rio Vista, Pittsburg, Antioch, Oakley, Brentwood, Stockton, Lathrop, Manteca, Tracy, and Lodi. Most of the population resides along the boundaries of the Delta. The Delta has a distinctive social, cultural, and natural heritage that reflects a long history of agricultural and recreational industries and water supply and flood control infrastructure including canals, sloughs, and pipelines conveying water from the Delta to the Central Valley, San Francisco Bay, and southern California.

Existing socioeconomic conditions in the Delta region and the effect of the proposed project, action alternatives, and No Action Alternative on socioeconomic conditions are discussed in this chapter for the chapter's study area. The description is both quantitative and qualitative, and focuses on community character, social and economic characteristics, population, housing, employment, and income at regional levels, and satisfies NEPA's requirements regarding socioeconomic impacts. CEQA does not require a discussion of socioeconomic effects, except where they would result in reasonably foreseeable adverse physical changes to the environment. Under CEQA social or economic effects alone shall not be treated as significant effects (State CEQA Guidelines §§ 15064(f), 15131). DWR's Economic Analysis Guidebook (California Department of Water Resources 2008a) also provides guidance regarding the economic assessments that should be conducted from project formulation through implementation. These include cost effectiveness, benefit-cost, socioeconomic impacts, risk and uncertainty, and financial analyses. Additional information on individual racial/ethnic groups, low-income populations, and poverty levels is presented in Chapter 28, Environmental Justice, Section 28.2.

16.1.1 Potential Socioeconomics Effects Area

This chapter describes socioeconomics effects in the Delta region. The study area for the socioeconomics analysis comprises Sacramento, San Joaquin, Yolo, Solano, and Contra Costa Counties, collectively referred to as the Delta region. The discussion of the Delta region describes the existing socioeconomic conditions of the statutory Delta and the surrounding Delta counties. Potential effects related to changes in SWP and CVP deliveries are also described for those hydrologic regions that receive water from the Delta: San Francisco Bay, Sacramento River, San Joaquin River, Central Coast, South Coast, Tulare Lake, South Lahontan, and Colorado River. For more information on these regions, see Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.1.3, and for a map of the hydrologic regions, see Figure 6-1 in Chapter 6, Surface Water.
**16.1.1.1 Statutory Delta**

Socioeconomic conditions in the Delta region are described below for population and housing, employment and labor force trends, prominent business and industry types, government and finance, and additional discussion of the recreation and agriculture sectors based on their contributions to the regional economy.

The socioeconomic conditions are described for a larger area than the statutory Delta, because it is anticipated that construction and operation of BDCP conservation measures, as described in Chapter 3, *Description of Alternatives*, Section 3.3.1, would potentially affect not only the statutory Delta, but also a larger area that covers parts of the Delta counties surrounding the statutory Delta. Additionally, data for some conditions, such as employment-by-industry information, are available only at the county level. As a result, discussion of the Delta region covers specific characteristics of the communities in the statutory Delta and a summary of information at the county level. Figure 1-9 in Chapter 1, *Introduction*, shows the counties and communities in the Delta region. The following discussion is focused on Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties.

**Delta Community Overview**

Numerous communities with populations ranging from thousands (e.g., Pittsburg) to a few hundred (e.g., Locke) are located in Contra Costa, Sacramento, San Joaquin, Solano, and Yolo Counties. Surrounding these communities are farms, ranches, orchards, and vineyards, most of which have residences associated with them that are not in a delineated community, but are socially tied to a community through general proximity or public services (e.g., school district boundaries and public service delivery areas). The Delta Reform Act of 2009 designated a number of unincorporated Legacy Communities in the Delta, including Bethel Island, Clarksburg, Courtland, Freeport, Hood, Isleton, Knightsen, Rio Vista, Ryde, Locke, and Walnut Grove. These communities exemplify the Delta’s unique cultural history and contribute to the sense of the Delta as a place. In addition to recognized cities and communities, the Delta also includes numerous small, recreational areas (including campgrounds, marinas, recreational vehicle parks, and vacation homes) that are popular throughout the spring and summer months.

Many Delta residents, whether full time or seasonal, are drawn to the area by the recreational opportunities afforded by the approximately 1,000 miles of waterways and multiple islands of the Delta. For many Delta residents, especially those arriving in more recent years, choosing to reside in the Delta is based on a desire to combine the urban lifestyles in nearby Sacramento and the Bay Area with a physical setting that provides relatively easy access to an extensive system of waterways.

The unique landscape, heritage, and recreational opportunities found in the Delta combine to create a distinctive environment that supports its own social and cultural character. The combination of the physical and biological environment with the social, economic, and cultural character of the Delta communities creates a unique regional framework.

Beyond the physical boundaries of the Delta, there are people who are connected to the Delta because of their business needs, their recreation interests, and social activities. For the people who reside outside the Delta, there is a sense of being part of the community because of the social interaction, common ties, and common appreciation of the Delta environment shared among residents and visitors. Different user groups may have a sense of being part of the larger Delta community because of shared values that are linked to the Delta landscape and resources.
Geographic Distribution and Characterization of Population in the Delta

The demographic composition of the Delta varies greatly. It can be characterized by small towns and dispersed rural residences in the interior of the Delta, and large urban areas on the periphery. In general, the population density of the inner Delta is very low. Most of the population resides in or near the peripheral urban areas. The highest concentration of people is in the urban centers of Sacramento to the north, Antioch and Pittsburg to the west, and Stockton and Tracy to the southeast. The small rural communities of Freeport, Isleton, and Thornton also are in the interior of the Delta.

The population in the interior of the Delta is centered around several rural communities, including Clarksburg, Courtland, Hood, Isleton, and Walnut Grove/Locke/Ryde (Delta Protection Commission 2012). These communities have experienced land use restrictions that inhibit urban development within the Primary Zone of the Delta, an area generally representing the inner Delta, defined by the Delta Protection Commission for the purposes of land use planning (see Figure 13-1 in Chapter 13, Land Use, for a map of the Primary Zone of the Delta and the Secondary Zone, another area identified for land use planning purposes, which lies outside of the Primary Zone). As a result of passage of the Delta Protection Act of 1992 and implementation of the Delta Protection Commission’s Land Use and Resource Management Plan for the Primary Zone of the Delta in 1995, expansion of urban development in these communities is generally not allowed unless proponents can demonstrate that implementing their projects would not result in loss of wetlands or riparian habitat, will not degrade water quality, will not interfere with migratory birds or public access, will not harm agricultural operations, and will not degrade levees or expose the public to increased flood hazards (Delta Protection Commission 2005). The Delta Protection Act requires the Delta Protection Commission to prepare, adopt, review, and maintain a comprehensive long-term resource management plan for land uses within the Primary Zone. The most recent Land Use and Resource Management Plan (Delta Protection Commission 2011) was adopted in 2011.

In addition to more densely populated Delta communities in the Primary Zone, numerous residences are scattered throughout the Delta islands and are either associated with agricultural parcels or are more estate-style residences used as vacation or leisure residences. Among the Delta islands in the interior of the Delta, Brannan-Andrus Island, Bethel Island, Byron Tract, New Hope Tract, and Sargent Barnhart Tract historically have had the highest populations (California Department of Water Resources 1995), although determining the populations of these individual islands is difficult because of seasonal changes in the recreation-associated residency and the presence of temporary agricultural workers on some islands, which can skew census tabulations. Some islands in the Delta are dedicated solely to agriculture or natural habitat, including McCormack-Williamson Tract, Kimball Island, and Coney Island.

The population of the Delta is relatively diverse as a result of its unique cultural history, the presence of seasonal farm workers, and increasing development within the larger Delta communities. There are high proportions of minority residents in both urban and rural areas. Historically, many of the agricultural areas in the interior of the Delta exhibit high proportions of minority residents, including Hispanics, Asians, and African-Americans because of a combination of historical and recent settlement trends. Chapter 28, Environmental Justice, Sections 28.2.1 and 28.2.2, further discusses the demographics of minority populations in the Delta. Population estimates and growth trends for counties and communities located in the Delta are provided in Section 16.1.1.2, Population of the Delta. Photographs included in Appendix 16B, Community Characterization Photographs, also provide context for the character of Delta communities.
Economy

The economy of the interior of the Delta generally revolves around agriculture and tourism. This contrasts with the economies of the more urban and suburban communities on the periphery of the Delta that are generally tied to the more urban, diversified economies of Sacramento and the San Francisco Bay Area and are less dependent on tourism and agriculture.

The economy of the Delta is rooted in agriculture. For decades, the agricultural fields grew some of California’s most well-known crops, including asparagus and pears. Agriculture became the primary economic driver in the Delta because of the rich soil, ample water supply, and proximity of urban markets; and agriculture fostered a diverse population in terms of race and ethnicity. The waterways of the Delta have been used to transport agricultural products to urban centers, such as Stockton or Sacramento for processing, packing, and shipment.

Today, the agricultural sector is still important in the Delta, but changes in mechanization and processing have resulted in a much smaller proportion of residents participating in agriculture than during the early part of the 20th century. Viniculture is growing in economic importance for some Delta communities. Concentrated around Clarksburg, 11 different appellation vintners have either lands or wineries in the Delta.

Tourism and recreation are the next most important economic drivers in the Delta. The Delta is a recreation destination for boating, fishing, waterskiing, and windsurfing. Because the communities in the interior of the Delta were established primarily for their easy access to the water, Delta communities are easily reached destinations for boaters and recreationists traveling through the area. As some areas have become key destinations for recreational users, the tourist activity supports additional services and businesses. Some of the recreationally-oriented communities have restaurants, cafes, retail shops, and service providers near the local dock or marina.

County Profiles

Key socioeconomic characteristics of each county and the main communities in the Delta region are described based on available data, as presented in Section 16.1.1.2 through Section 16.1.1.7.

Contra Costa County

The southwestern portion of the Delta lies in Contra Costa County, which extends from the Delta on its eastern and northeastern boundary to San Francisco Bay and San Pablo Bay on the west. Identified communities in Contra Costa County that are in the statutory Delta are Bay Point, Discovery Bay, and Knightsen. Communities in Contra Costa County that are partially in the statutory Delta include Antioch, Bethel Island, Brentwood, Byron, Oakley, and Pittsburg.

In 2010, more than 290,000 people, almost 28% of the county’s population, resided in communities located partially or completely in the Delta. Of these, Antioch has the largest population, at 102,372 residents, and Byron has the smallest, at 1,277 residents.

As shown in Table 16-3, approximately 60% of the county’s population is between the ages of 20 and 64. The county as a whole is 52% minority, 1 with communities that are partially located in the

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1 The Council on Environmental Quality (CEQ) defines the term “minority” as persons from any of the following U.S. Census Bureau categories for race: Black/African American, Asian, Native Hawaiian and Other Pacific Islander, and American Indian or Alaska Native. Additionally, for the purposes of this analysis, “minority” also includes all other nonwhite racial categories, such as “some other race” and “two or more races.” The CEQ also concluded that
Socioeconomics

Delta ranging from 20 to 80% minority composition (U.S. Census Bureau 2011). The minority population in these communities ranges from 20% in Bethel Island to a high of 80% in Pittsburg. More than 20% of residents in the communities of Antioch, Bay Point, Brentwood, Knightsen, Oakley, and Pittsburg were in the age range of 5 to 19 years, with larger proportions between the ages of 20 and 64. In contrast, Bethel Island, an age-restricted community, was the only one of these communities with more than 20% in the age range of 65 years and above. Most residents in these communities live in owner-occupied housing (U.S. Census Bureau 2011).

The 2006-2010 average per capita income in Contra Costa County was $37,818, and the median household income was $78,385, with 9% of the population living below the poverty level. The communities that are partially located in the Delta are similar in income profile to the county as a whole, and have from 3 to 22% of the population living below the poverty line. Both the per capita income and median household income of the county were higher than the state as a whole, and the percentage of persons living below the poverty level was lower than that of the state (U.S. Census Bureau 2012a).

From 2000 through 2012, the county’s labor force grew at a rate of 0.5%, with 525,400 residents in the labor force as of 2012. Of these, 474,900 are employed, resulting in a current unemployment rate of 9.6%, lower than the statewide unemployment rate (California Employment Development Department 2012a). Contra Costa County is home to a wide range of businesses. Various major corporations have their headquarters in the county, including Chevron, The PMI Group Inc., and Bio-Rad. The county has a substantial heavy industrial and manufacturing sector. Business, professional, and financial services are another large portion of the economy (California Employment Development Department 2008).

Sacramento County

Sacramento County extends from the low Delta lands between the Sacramento and San Joaquin Rivers north to about 10 miles beyond the State Capitol and east to the foothills of the Sierra Nevada. The Sacramento, Mokelumne, and San Joaquin Rivers form the southern border of Sacramento County in the Delta.

The Delta lies in the southwestern region of the county. Sacramento County communities completely within the Delta include Courtland, Freeport, Hood, Isleton, Locke, and Walnut Grove. Additionally, small portions of the cities of Sacramento and Elk Grove lie partially within the Delta. In 2010, 469,498 people, or 33% of Sacramento County’s population, resided in communities lying at least partially within the Delta. Most of the county population resides in Sacramento and its suburbs outside the statutory Delta. Of Sacramento County’s eight communities in the Delta, Sacramento has the largest population, with 466,488 residents; however, most of the population does not live within the Delta. Freeport and Hood have the smallest populations, each with fewer than 1,000 residents.

persons identified by the U.S. Census Bureau as ethnically Hispanic, regardless of race, should be included in minority counts (CEQ 1997).

2 The U.S. Census Bureau defines the term “poverty level” by using the Office of Management and Budget’s Statistical Policy Directive 14. Income thresholds are used to determine who is in poverty. If a family’s total income is less than a specified threshold, the family is considered in poverty. Poverty levels do not vary geographically (U.S. Census Bureau 2010b).
As shown in Table 16-3, approximately 60% of the county’s population is between the ages of 20 and 64. The total minority population in the county is about 52%; however, in the communities that are totally located in the Delta, the percentage of the population identified as minority ranges from 21% (Freeport) to 66% (Hood).

More than 20% of residents in the communities of Courtland, Hood, Isleton, Sacramento, and Walnut Grove were in the age range of 5 to 19 years, with larger proportions between the ages of 20 and 64. In contrast, the community of Freeport was the only one of these communities with more than 20% in the age range of 65 years and above. In Courtland, Freeport, Sacramento, and Walnut Grove, fewer than half of residents live in owner-occupied housing units. In Hood and Isleton, a majority of residents live in owner-occupied units (U.S. Census Bureau 2011).

The 2006-2010 per capita income in Sacramento County was $26,953, and the median household income was $56,439, with 14% of the population living below the poverty line (U.S. Census Bureau 2012a). While the income averages are lower than those of the state, the level of poverty roughly matches the state average percentage of persons living below the poverty limit. The communities in the Delta have a range in percentages of persons living below the poverty line, ranging from 10% to about 17%.

From 2000 to 2012, the Sacramento County labor force annual growth rate was 0.9%, with 667,800 residents in the labor force as of 2012 with an unemployment rate of 11.2%, slightly lower than the state unemployment rate of 11.3% (California Employment Development Department 2012a, 2012b). In addition to the State of California, major employers include school districts, healthcare facilities, and the agricultural industry (County of Sacramento 2009a).

San Joaquin County

Communities in San Joaquin County that are located in the Delta include French Camp, Terminous, Thornton, and the cities of Lathrop, Stockton, and Tracy. In 2010, the San Joaquin County population living in communities lying at least partially within the Delta was more than 393,000, about 57% of the county’s population. Of San Joaquin County’s communities partially or entirely located in the Delta, Stockton has the largest population at 291,707, followed by Tracy with 82,922 residents. Terminous is smallest, with a population of 381.

As shown in Table 16-3, approximately 57% of the county’s population is between the ages of 20 and 64. The total minority population of the county is about 64%. In communities that lie at least partially within the Delta, the minority population ranges from 18% in Terminous to 77% in Stockton.

More than 25% of residents in the communities of Lathrop, Stockton, and Tracy were in the age range of 5 to 19 years, with larger proportions between the ages of 20 and 64. In contrast, the community of Terminous was the only one of these communities with more than 20% in the age range of 65 years and above. In all of these communities, more than half of residents live in owner-occupied housing units (U.S. Census Bureau 2011).

The 2006–2010 per capita income in San Joaquin County was $22,851, and the median household income was $54,341, with 14% of the population living below poverty level (U.S. Census Bureau 2012a). These income figures are lower than the California average and this poverty rate is higher than the state’s as a whole. Of the communities that are located in the Delta, the percentage of persons living in poverty ranged from 8% in Lathrop to about 20% in Stockton.
In 2012, there were 299,400 residents in the county’s labor force. Of these, 249,900 persons were employed, resulting in an unemployment rate of 16.5%. This was far greater than the state’s unemployment rate of 11.3% (California Employment Development Department 2012a and 2012b). Major employment sectors in the county include agriculture, manufacturing, and wholesale and retail trade (County of San Joaquin 2009a; California Employment Development Department 2009).

**Solano County**

Located approximately 45 miles northeast of San Francisco and 45 miles southwest of Sacramento, Solano County supports a mix of agricultural and suburban areas. It covers 909 square miles, including 84 square miles of open water and 675 square miles of rural land (County of Solano 2009a). The southeastern part of Solano County lies in the Delta. Rio Vista is the only community in Solano County identified in this analysis as lying partially or completely within the Delta and representing only about 2% of the county’s population. As shown in Table 16-3, approximately 61% of the county’s population is between the ages of 20 and 64. The total minority population of the county is about 59% while minorities comprise 26% of the population of Rio Vista. In communities that lie at least partially within the Delta, the minority population ranges from 18% in Terminous to 77% in Stockton.

Fewer than 15% of residents in Rio Vista were in the age range of 5 to 19 years, with 50% between the ages of 20 and 64 and more than 32% aged 65 or older. More than 75% of residents of Rio Vista live in owner-occupied housing units (U.S. Census Bureau 2011).

The county’s 2006–2010 per capita income was $28,649, and the median household income was $68,409. The percentage of persons living below the poverty level was 10% (U.S. Census Bureau 2012a). While the per capita income of Solano County is lower than the state average, the median household income surpasses that of the state and the poverty rate is lower that the statewide rate. The community of Rio Vista had 10% of residents living below the poverty line.

In 2012, Solano County reported 217,900 residents in the labor force. Of these, 194,300 persons were employed, resulting in an unemployment rate of 10.8%, lower than the state unemployment rate of 11.3% (California Employment Development Department 2012a). Solano County restricts urban residential and commercial development outside cities, thus preserving approximately 80% of the land for open space or agricultural use. In addition to agriculture, the Solano County is home to biotechnology and other growth industries.

**Yolo County**

The southeast portion of Yolo County lies in the Delta. The communities in Yolo County that are in the Delta include Clarksburg and West Sacramento. In 2010, the population of these communities was more than 49,000, accounting for about 24% of the county population. Of Yolo County’s two communities in the Delta, West Sacramento has the larger population, with 48,744 residents, while Clarksburg supports 418 residents.

As shown in Table 16-3, approximately 62% of the county’s population is between the ages of 20 and 64. The total minority population of the county is about 50%. In communities that lie at least partially within the Delta, the minority population ranges from 33% in Clarksburg to 53% in West Sacramento.

About 20% of residents in the communities of Clarksburg and West Sacramento were in the age range of 5 to 19 years, with larger proportions between the ages of 20 and 64. In both of these
communities, more than half of residents live in owner-occupied housing units (U.S. Census Bureau 2011).

The 2006–2010 per capita income in Yolo County was $27,420, and the median household income was $57,077 (U.S. Census Bureau 2012a). The percentage of persons living below the poverty level was 17%, compared with the state average of 14% (U.S. Census Bureau 2012a). Additionally, the per capita income and median household income for Yolo County are lower than the state averages.

West Sacramento had a similar percentage of residents living below the poverty line, at 17%.

In 2012, Yolo County had 99,300 persons in the labor force, and an unemployment rate of 13.9%, more than two percentage points higher than the unemployment rate of the state (California Employment Development Department 2012a). Yolo County is home to the Port of Sacramento, which ships out 1.3 million tons of the county’s agricultural products, such as rice, wheat, and safflower seed, to worldwide markets (County of Yolo 2009a). Agriculture, education, health care, and services are leading sources of employment.

16.1.1.2 Population of the Delta

Population and Growth Trends

The Delta Protection Commission’s *Economic Sustainability Plan for the Sacramento-San Joaquin Delta* reported a growth rate of about 54% within the statutory Delta between 1990 and 2010, as compared with a 25% growth rate statewide during the same period (Delta Protection Commission 2012). The report also indicated that population growth had occurred in the Secondary Zone of the Delta but not in the Primary Zone (see Figure 13-1 for a map of the Primary and Secondary Zones of the Delta, as defined by the DPC), and that population in the central and south Delta areas had decreased since 2000.

Table 16-1 illustrates past, current, and projected population trends for the five counties in the Delta. As of 2010, the combined population of the Delta counties was approximately 3.8 million. Sacramento County contributed 37.7% of the population of the Delta counties, and Contra Costa County contributed 27.8%. Yolo County had the smallest population (200,849 or 5.3%) of all the Delta counties.

**Table 16-1. Delta Counties and California Population, 2000–2050**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Contra Costa County</td>
<td>0.95</td>
<td>1.05</td>
<td>1.16</td>
<td>1.21</td>
<td>1.50</td>
</tr>
<tr>
<td>Sacramento County</td>
<td>1.23</td>
<td>1.42</td>
<td>1.56</td>
<td>1.64</td>
<td>2.09</td>
</tr>
<tr>
<td>San Joaquin County</td>
<td>0.57</td>
<td>0.69</td>
<td>0.80</td>
<td>0.86</td>
<td>1.29</td>
</tr>
<tr>
<td>Solano County</td>
<td>0.40</td>
<td>0.41</td>
<td>0.45</td>
<td>0.47</td>
<td>0.57</td>
</tr>
<tr>
<td>Yolo County</td>
<td>0.17</td>
<td>0.20</td>
<td>0.22</td>
<td>0.24</td>
<td>0.30</td>
</tr>
<tr>
<td>Delta Counties</td>
<td>3.32</td>
<td>3.77</td>
<td>4.18</td>
<td>4.42</td>
<td>5.75</td>
</tr>
<tr>
<td>California</td>
<td>34.00</td>
<td>37.31</td>
<td>40.82</td>
<td>42.72</td>
<td>51.01</td>
</tr>
</tbody>
</table>

Sources: California Department of Finance 2012a.
For the 10-year period between 2000 and 2010, the population of the Delta counties increased at an average annual rate of 1.37% (13.7% in total), with the greatest rate of population growth occurring in San Joaquin County. Population growth in Solano County during this 10-year period was the slowest (0.43% per year). The state showed about a 1% annual growth rate in population during this period, slower than that of the Delta counties combined.

Growth projections through 2050 indicate that all counties overlapping the Delta are projected to grow at a faster rate than the state as a whole. Total population in the Delta counties is projected to grow at an average annual rate of 1.2% through 2030 (California Department of Finance 2012a).

Table 16-2 presents more detailed information on populations of individual communities in the Delta. Growth rates from 2000 to 2010 were generally higher in the smaller communities than in larger cities such as Antioch and Sacramento. This is likely a result of these communities having lower property and housing prices, and their growth being less constrained by geography and adjacent communities.

Population density varies widely across the Delta region. Analysis done for the Delta Risk Management Strategy (California Department of Water Resources 2008c) indicated several Delta islands with fewer than 20 residents. In contrast, some cities are wholly or partly within the statutory Delta (e.g., Sacramento and Stockton) and have densities exceeding 3,000 residents per square mile. Smaller communities in the Delta, such as Walnut Grove, have population densities as low as 200 residents per square mile (U.S. Census Bureau 2000).

**Age Distribution**

The *Economic Sustainability Plan for the Sacramento-San Joaquin Delta* described a relatively young age class throughout the Delta with a slightly older population within the Primary Zone (Delta Protection Commission 2012). The report also indicated that there were a higher percentage of households with two or fewer residents in the Primary Zone than in the rest of the Delta or statewide.

Age distribution in the Delta is shown in Table 16-3. The age composition of people residing in the Delta was generally similar to that of the state. The median ages in the five Delta counties ranged from 30 to 38, consistent with the state’s median age of 34.5.
### Table 16-2. Delta Communities Population, 2000 and 2010

<table>
<thead>
<tr>
<th>Community</th>
<th>2000</th>
<th>2010</th>
<th>Average Annual Growth Rate 2000–2010</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contra Costa County</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Incorporated Cities and Towns</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Antioch</td>
<td>90,532</td>
<td>102,372</td>
<td>1.3%</td>
</tr>
<tr>
<td>Brentwood</td>
<td>23,302</td>
<td>51,481</td>
<td>12.1%</td>
</tr>
<tr>
<td>Oakley</td>
<td>25,619</td>
<td>35,432</td>
<td>3.8%</td>
</tr>
<tr>
<td>Pittsburg</td>
<td>56,769</td>
<td>63,264</td>
<td>1.1%</td>
</tr>
<tr>
<td><strong>Small or Unincorporated Communities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bay Point</td>
<td>21,415</td>
<td>21,349</td>
<td>-0.0%</td>
</tr>
<tr>
<td>Bethel Island</td>
<td>2,252</td>
<td>2,137</td>
<td>-0.5%</td>
</tr>
<tr>
<td>Byron</td>
<td>884</td>
<td>1,277</td>
<td>4.5%</td>
</tr>
<tr>
<td>Discovery Bay</td>
<td>8,847</td>
<td>13,352</td>
<td>5.1%</td>
</tr>
<tr>
<td>Knightsen</td>
<td>861</td>
<td>1,568</td>
<td>8.2%</td>
</tr>
<tr>
<td><strong>Sacramento County</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Incorporated Cities and Towns</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isleton</td>
<td>828</td>
<td>804</td>
<td>-0.3%</td>
</tr>
<tr>
<td>Sacramento</td>
<td>407,018</td>
<td>466,488</td>
<td>1.5%</td>
</tr>
<tr>
<td><strong>Small or Unincorporated Communities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Courtland</td>
<td>632</td>
<td>355</td>
<td>-4.4%</td>
</tr>
<tr>
<td>Freeport and Hood</td>
<td>467</td>
<td>309</td>
<td>-3.4%</td>
</tr>
<tr>
<td>Locke</td>
<td>1,003</td>
<td>Not available</td>
<td>—</td>
</tr>
<tr>
<td>Walnut Grove</td>
<td>646</td>
<td>1,542</td>
<td>13.9%</td>
</tr>
<tr>
<td><strong>San Joaquin County</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Incorporated Cities and Towns</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lathrop</td>
<td>10,445</td>
<td>18,023</td>
<td>7.3%</td>
</tr>
<tr>
<td>Stockton</td>
<td>243,771</td>
<td>291,707</td>
<td>2.0%</td>
</tr>
<tr>
<td>Tracy</td>
<td>56,929</td>
<td>82,922</td>
<td>4.6%</td>
</tr>
<tr>
<td><strong>Small or Unincorporated Communities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terminus</td>
<td>1,576</td>
<td>381</td>
<td>-7.6%</td>
</tr>
<tr>
<td><strong>Solano County</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Incorporated Cities and Towns</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rio Vista</td>
<td>4,571</td>
<td>7,360</td>
<td>6.1%</td>
</tr>
<tr>
<td><strong>Yolo County</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Incorporated Cities and Towns</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>West Sacramento</td>
<td>31,615</td>
<td>48,744</td>
<td>5.4%</td>
</tr>
<tr>
<td><strong>Small or Unincorporated Communities</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clarksburg</td>
<td>681</td>
<td>418</td>
<td>-3.9%</td>
</tr>
</tbody>
</table>

Sources: U.S. Census Bureau 2000; U.S. Census Bureau 2011.

* Freeport had a population of 38; Hood had a population of 271.
### Table 16-3. Delta Counties and California Age Distribution, 2010

<table>
<thead>
<tr>
<th>Population Segment</th>
<th>Contra Costa County</th>
<th>Sacramento County</th>
<th>San Joaquin County</th>
<th>Solano County</th>
<th>Yolo County</th>
<th>Delta Counties</th>
<th>California</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Population</td>
<td>1,049,025</td>
<td>1,418,788</td>
<td>685,306</td>
<td>413,344</td>
<td>200,849</td>
<td>3,767,312</td>
<td>37,253,956</td>
</tr>
<tr>
<td>&lt;5 years&lt;sup&gt;a&lt;/sup&gt;</td>
<td>67,018</td>
<td>101,063</td>
<td>54,228</td>
<td>26,852</td>
<td>12,577</td>
<td>261,738</td>
<td>2,531,333</td>
</tr>
<tr>
<td>%</td>
<td>6.4%</td>
<td>7.1%</td>
<td>7.9%</td>
<td>6.5%</td>
<td>6.3%</td>
<td>6.9%</td>
<td>6.8%</td>
</tr>
<tr>
<td>5–19 years&lt;sup&gt;a&lt;/sup&gt;</td>
<td>220,495</td>
<td>303,612</td>
<td>169,357</td>
<td>86,370</td>
<td>44,246</td>
<td>824,080</td>
<td>7,920,709</td>
</tr>
<tr>
<td>%</td>
<td>21.0%</td>
<td>21.4%</td>
<td>24.7%</td>
<td>20.9%</td>
<td>22.0%</td>
<td>21.9%</td>
<td>21.3%</td>
</tr>
<tr>
<td>20–64 years&lt;sup&gt;a&lt;/sup&gt;</td>
<td>631,074</td>
<td>855,562</td>
<td>390,540</td>
<td>253,275</td>
<td>124,255</td>
<td>2,254,706</td>
<td>22,555,400</td>
</tr>
<tr>
<td>%</td>
<td>60.2%</td>
<td>60.3%</td>
<td>57.0%</td>
<td>61.3%</td>
<td>61.9%</td>
<td>59.8%</td>
<td>60.5%</td>
</tr>
<tr>
<td>65+ years&lt;sup&gt;a&lt;/sup&gt;</td>
<td>130,438</td>
<td>158,551</td>
<td>71,181</td>
<td>46,847</td>
<td>19,771</td>
<td>426,788</td>
<td>4,246,514</td>
</tr>
<tr>
<td>%</td>
<td>12.4%</td>
<td>11.2%</td>
<td>10.4%</td>
<td>11.3%</td>
<td>9.8%</td>
<td>11.3%</td>
<td>11.4%</td>
</tr>
<tr>
<td>Median Age</td>
<td>38.5</td>
<td>34.8</td>
<td>32.7</td>
<td>36.9</td>
<td>30.4</td>
<td>35.4</td>
<td>35.2</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau 2011.

<sup>a</sup> Percentages are of the total population.

Most communities in the Delta had an age distribution consistent with that of the counties and state as a whole. However, a few communities, such as Bethel Island, Terminous, and Rio Vista, had a greater percentage of the population at or near retirement age (U.S. Census Bureau 2012a).

### 16.1.1.3 Housing in the Delta

#### Housing Unit Trends

Table 16-4 illustrates the distribution of housing units in the Delta as a whole, in each of the five counties, and in California. It also provides information on housing units for incorporated Delta communities. As of 2010, there were 1.4 million housing units within Delta counties, representing 10.4% of the housing units in the state. Sacramento County, with the largest population in the five-county Delta region, also contained the most housing units in the region in 2010. Yolo County, with the smallest population in the Delta region, also had the fewest housing units. Recent growth in the number of housing units has been greatest in San Joaquin County. Contra Costa County registered the lowest increase in housing units. These patterns are consistent with the population growth discussed previously.

From 2000 to 2010, the Delta counties experienced a 1.6% average annual growth in the total number of housing units. This is higher than the state growth rate of 1.1%. During this 10-year period, San Joaquin County had the greatest increase in the number of housing units in the Delta region, with an additional 40,667 units being built (a 21% increase, or 2.15% average annual growth). However, over the past several years, Delta region counties, along with many other areas, have experienced a general decline in housing demand.

Housing density varies greatly across the Delta region, corresponding to the variation in population density. Some Delta islands contain fewer than five housing units. As a result, substantial areas in the statutory Delta contain fewer than 20 housing units per square mile (California Department of...
In contrast, cities that are wholly or partly within the statutory Delta, such as Sacramento and Stockton, contain more than 1,000 housing units per square mile. The housing density of small communities in the Delta generally falls in between these extremes; Walnut Grove, for example, contains about 90 housing units per square mile (U.S. Census Bureau 2000).

Table 16-4. Housing Units in Delta Counties, Delta Communities, and California, 2000 and 2010

<table>
<thead>
<tr>
<th>Area</th>
<th>2000</th>
<th>2010</th>
<th>Average Annual Growth Rate 2000–2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contra Costa County</td>
<td>354,577</td>
<td>400,268</td>
<td>1.3%</td>
</tr>
<tr>
<td>Antioch</td>
<td>30,116</td>
<td>34,146</td>
<td>1.3%</td>
</tr>
<tr>
<td>Brentwood</td>
<td>7,788</td>
<td>17,715</td>
<td>12.7%</td>
</tr>
<tr>
<td>Oakley</td>
<td>7,946</td>
<td>11,104</td>
<td>4.0%</td>
</tr>
<tr>
<td>Pittsburg</td>
<td>18,300</td>
<td>21,056</td>
<td>1.5%</td>
</tr>
<tr>
<td>Sacramento County</td>
<td>474,814</td>
<td>556,208</td>
<td>1.7%</td>
</tr>
<tr>
<td>Isleton</td>
<td>384</td>
<td>378</td>
<td>-0.2%</td>
</tr>
<tr>
<td>Sacramento</td>
<td>163,957</td>
<td>195,446</td>
<td>1.9%</td>
</tr>
<tr>
<td>San Joaquin County</td>
<td>189,160</td>
<td>229,827</td>
<td>2.1%</td>
</tr>
<tr>
<td>Lathrop</td>
<td>2,991</td>
<td>5,061</td>
<td>6.9%</td>
</tr>
<tr>
<td>Stockton</td>
<td>82,042</td>
<td>97,085</td>
<td>1.8%</td>
</tr>
<tr>
<td>Tracy</td>
<td>18,087</td>
<td>25,596</td>
<td>4.2%</td>
</tr>
<tr>
<td>Solano County</td>
<td>134,513</td>
<td>153,280</td>
<td>1.4%</td>
</tr>
<tr>
<td>Rio Vista</td>
<td>1,974</td>
<td>3,771</td>
<td>9.1%</td>
</tr>
<tr>
<td>Yolo County</td>
<td>61,587</td>
<td>74,224</td>
<td>2.1%</td>
</tr>
<tr>
<td>West Sacramento</td>
<td>12,133</td>
<td>18,677</td>
<td>5.4%</td>
</tr>
<tr>
<td>Delta Counties</td>
<td>1,214,651</td>
<td>1,413,807</td>
<td>1.6%</td>
</tr>
<tr>
<td>California</td>
<td>12,214,550</td>
<td>13,591,866</td>
<td>1.7%</td>
</tr>
</tbody>
</table>

Source: California Department of Finance 2012b.
Note: Data available for incorporated communities only.

Housing Type Trends

Housing type trends among the five counties and selected communities in the Delta are given in Table 16-5. Of the Delta counties, Sacramento County had the highest number of single-family and multifamily homes. In 2010, Sacramento County had 391,958 single-family and 148,453 multifamily homes. Yolo County had the fewest single-family and multifamily homes during the period, with 48,012 single-family units and 22,484 multifamily units in 2010. Of the Delta counties, San Joaquin County displayed the greatest annual growth rate in single-family homes over the period (2.7%) and the lowest annual growth rate in multifamily housing (0.6%). Yolo County had the second highest growth rate in single-family housing and the highest growth rate in multifamily housing of the Delta counties.
### Table 16-5. Housing Type Trends, by County and Incorporated Communities, 2000–2010

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Contra Costa County</td>
<td>261,990</td>
<td>85,008</td>
<td>298,145</td>
<td>94,488</td>
<td>1.4%</td>
</tr>
<tr>
<td>Antioch</td>
<td>24,283</td>
<td>5,564</td>
<td>28,016</td>
<td>5,861</td>
<td>1.5%</td>
</tr>
<tr>
<td>Brentwood</td>
<td>6,768</td>
<td>672</td>
<td>16,122</td>
<td>1,242</td>
<td>13.8%</td>
</tr>
<tr>
<td>Oakley</td>
<td>7,363</td>
<td>164</td>
<td>10,123</td>
<td>560</td>
<td>3.7%</td>
</tr>
<tr>
<td>Pittsburg</td>
<td>13,240</td>
<td>4,390</td>
<td>15,805</td>
<td>4,570</td>
<td>1.9%</td>
</tr>
<tr>
<td>Sacramento County</td>
<td>329,308</td>
<td>130,022</td>
<td>391,958</td>
<td>148,453</td>
<td>1.9%</td>
</tr>
<tr>
<td>Isleton</td>
<td>224</td>
<td>113</td>
<td>223</td>
<td>108</td>
<td>0.0%</td>
</tr>
<tr>
<td>Sacramento</td>
<td>107,257</td>
<td>53,029</td>
<td>127,660</td>
<td>64,100</td>
<td>1.9%</td>
</tr>
<tr>
<td>San Joaquin County</td>
<td>140,524</td>
<td>39,445</td>
<td>178,172</td>
<td>41,852</td>
<td>2.7%</td>
</tr>
<tr>
<td>Lathrop</td>
<td>2,536</td>
<td>104</td>
<td>4,604</td>
<td>106</td>
<td>8.2%</td>
</tr>
<tr>
<td>Stockton</td>
<td>55,680</td>
<td>25,074</td>
<td>69,778</td>
<td>26,019</td>
<td>2.5%</td>
</tr>
<tr>
<td>Tracy</td>
<td>15,076</td>
<td>2,536</td>
<td>22,027</td>
<td>3,093</td>
<td>4.6%</td>
</tr>
<tr>
<td>Solano County</td>
<td>101,974</td>
<td>27,913</td>
<td>116,866</td>
<td>31,723</td>
<td>1.5%</td>
</tr>
<tr>
<td>Rio Vista</td>
<td>1,590</td>
<td>274</td>
<td>3,386</td>
<td>274</td>
<td>11.3%</td>
</tr>
<tr>
<td>Yolo County</td>
<td>38,868</td>
<td>19,110</td>
<td>48,012</td>
<td>22,484</td>
<td>2.4%</td>
</tr>
<tr>
<td>West Sacramento</td>
<td>7,585</td>
<td>3,017</td>
<td>12,787</td>
<td>4,311</td>
<td>6.9%</td>
</tr>
<tr>
<td>Delta Counties</td>
<td>872,664</td>
<td>301,498</td>
<td>1,033,153</td>
<td>339,000</td>
<td>1.8%</td>
</tr>
<tr>
<td>California</td>
<td>7,815,035</td>
<td>3,829,827</td>
<td>8,747,293</td>
<td>4,247,635</td>
<td>1.1%</td>
</tr>
</tbody>
</table>

Source: California Department of Finance 2012b.  
Note: Excludes mobile homes.

### Housing Vacancy Rates

Housing vacancy rates among the five counties and selected communities in the Delta are given in Table 16-6. Of the Delta counties, Sacramento County had the highest vacancy rate. In 2010, Sacramento County had a vacancy rate of 4.44%. Contra Costa County had the lowest vacancy rate during the period, with 2.98% in 2010. Of the Delta counties, Solano County displayed the greatest change in vacancy rate between 2000 and 2010 (0.97%).
Table 16-6. Housing Vacancy Rates, by County and Incorporated Communities, 2000–2010

<table>
<thead>
<tr>
<th>Area</th>
<th>Vacancy Rate 2000</th>
<th>Vacancy Rate 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contra Costa County</td>
<td>2.95%</td>
<td>2.98%</td>
</tr>
<tr>
<td>Antioch</td>
<td>2.58%</td>
<td>2.58%</td>
</tr>
<tr>
<td>Brentwood</td>
<td>3.74%</td>
<td>3.67%</td>
</tr>
<tr>
<td>Oakley</td>
<td>1.43%</td>
<td>1.54%</td>
</tr>
<tr>
<td>Pittsburg</td>
<td>3.05%</td>
<td>3.04%</td>
</tr>
<tr>
<td>Sacramento County</td>
<td>4.47%</td>
<td>4.44%</td>
</tr>
<tr>
<td>Isleton</td>
<td>10.68%</td>
<td>10.58%</td>
</tr>
<tr>
<td>Sacramento</td>
<td>5.72%</td>
<td>5.72%</td>
</tr>
<tr>
<td>San Joaquin County</td>
<td>3.98%</td>
<td>3.94%</td>
</tr>
<tr>
<td>Lathrop</td>
<td>2.77%</td>
<td>3.18%</td>
</tr>
<tr>
<td>Stockton</td>
<td>4.25%</td>
<td>4.25%</td>
</tr>
<tr>
<td>Tracy</td>
<td>2.58%</td>
<td>2.58%</td>
</tr>
<tr>
<td>Solano County</td>
<td>3.06%</td>
<td>4.03%</td>
</tr>
<tr>
<td>Rio Vista</td>
<td>4.71%</td>
<td>4.30%</td>
</tr>
<tr>
<td>Yolo County</td>
<td>3.59%</td>
<td>3.52%</td>
</tr>
<tr>
<td>West Sacramento</td>
<td>2.83%</td>
<td>6.01%</td>
</tr>
<tr>
<td>California</td>
<td>5.83%</td>
<td>5.90%</td>
</tr>
</tbody>
</table>

Source: California Department of Finance 2012b.
Note: Excludes mobile homes.

16.1.1.4 Employment, Labor Force, and Industry in the Delta

Employment, labor force, and industry indicators provide useful insight into an area’s economy. The following discussion describes recent employment trends, unemployment rates, labor force, and industry data. This section describes the employment and labor force characteristics in the Delta area based on data obtained largely from the California Employment Development Department (EDD) Labor Market Information Division (2009, 2012a, 2012b). Employment and labor force data are only available at the county level; thus, a community-level discussion is not included.

Employment, labor, and industry trends are discussed at a broad level for the five counties that make up the Delta. In 2012, the EDD reported a labor force of 1,809,800 people for the Delta counties. This is compared with 18,365,000 people in California’s labor force; thus, Delta counties make up about 10% of the state’s total labor force. Table 16-7 provides a breakdown of the labor force in each county in the Delta. Sacramento County is the largest contributor, with a labor force of 667,800. This is followed by Contra Costa County (525,400) and San Joaquin County (299,400). In 2012, Solano County registered 217,900 people in the labor force. Yolo County registered a labor force of 99,300. All counties’ labor force numbers have grown since 2000.

Table 16-8 displays information on Delta employment by industry, distribution of employment, and annual growth rates. The top three industries in the Delta counties in 2011, based on the number of employees, were services, government, and retail trade. The only industry that experienced positive growth over the 2006-2011 period was agriculture, with an average annual growth rate of 1.1%.
Due to the national economic recession that occurred during this period, all other industrial sectors had negative annual growth rates, ranging from -0.2% for the services sector to -8.2% for the manufacturing and construction sector.

Table 16-9 shows per capita personal income, median household income, and poverty status for the Delta counties. The per capita personal incomes (in 2010 inflation-adjusted dollars) for the five counties ranged from a high of $37,818 in Contra Costa County (30% higher than the state per capita income of $29,188) to a low of $22,851 in San Joaquin County. Contra Costa County also had the highest median household income in 2010 inflation-adjusted dollars ($78,385), while San Joaquin County had the lowest median household income ($54,341) (U.S. Department of Labor 2009).

### Table 16-7. Delta Counties and California Employment Trends, 2000–2012

<table>
<thead>
<tr>
<th>Area</th>
<th>2000</th>
<th>2012</th>
<th>Average Annual Growth Rate (2000–2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contra Costa County</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor force</td>
<td>495,300</td>
<td>525,400</td>
<td>0.5%</td>
</tr>
<tr>
<td>Employed</td>
<td>476,400</td>
<td>474,900</td>
<td>-0.0%</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>3.8%</td>
<td>9.6%</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Sacramento County</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor force</td>
<td>602,100</td>
<td>667,800</td>
<td>0.9%</td>
</tr>
<tr>
<td>Employed</td>
<td>574,200</td>
<td>592,900</td>
<td>0.3%</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>4.6%</td>
<td>11.2%</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>San Joaquin County</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor force</td>
<td>251,600</td>
<td>299,400</td>
<td>1.6%</td>
</tr>
<tr>
<td>Employed</td>
<td>231,600</td>
<td>249,900</td>
<td>0.7%</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>8.0%</td>
<td>16.5%</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Solano County</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor force</td>
<td>191,100</td>
<td>217,900</td>
<td>1.2%</td>
</tr>
<tr>
<td>Employed</td>
<td>180,700</td>
<td>194,300</td>
<td>0.6%</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>5.5%</td>
<td>10.8%</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Yolo County</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor force</td>
<td>86,200</td>
<td>99,300</td>
<td>1.3%</td>
</tr>
<tr>
<td>Employed</td>
<td>80,700</td>
<td>85,500</td>
<td>0.5%</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>6.4%</td>
<td>13.9%</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>All Delta Counties</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor force</td>
<td>1,626,300</td>
<td>1,809,800</td>
<td>0.9%</td>
</tr>
<tr>
<td>Employed</td>
<td>1,543,600</td>
<td>1,597,500</td>
<td>0.3%</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>5.1%</td>
<td>11.7%</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>California</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Labor force</td>
<td>16,658,900</td>
<td>18,365,000</td>
<td>0.9%</td>
</tr>
<tr>
<td>Employed</td>
<td>15,762,200</td>
<td>16,284,000</td>
<td>0.3%</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>5.4%</td>
<td>11.3%</td>
<td>N/A</td>
</tr>
</tbody>
</table>

Sources: California Employment Development Department 2012a, 2012b.

Note: Unemployment rates are cyclical, so annual growth rates do not apply. Employment data are from January 2000 and 2012.

The number of people living in poverty in the Delta counties is largely consistent with the income data. Contra Costa County had the lowest percentage of the population living below the poverty level, at 9%. Yolo County, with a slightly higher per capita income and median household income
than San Joaquin County, still registered the highest percentage of the population living below the poverty level, at 17%. San Joaquin County closely followed at 16%. These percentages are higher than those of the state, which had 14% of the population living below the poverty level.

Chapter 28, *Environmental Justice*, Section 28.2.3, provides greater detail regarding the distribution of low-income populations within the Delta counties.

### Table 16-8. Delta Counties Annual Employment and Shares by Industry, 2006–2011

<table>
<thead>
<tr>
<th>Industry</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>Annual Growth Rate&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>23,500</td>
<td>24,000</td>
<td>24,600</td>
<td>25,200</td>
<td>25,300</td>
<td>25,100</td>
<td>1.1%</td>
</tr>
<tr>
<td>Manufacturing and construction&lt;sup&gt;a&lt;/sup&gt;</td>
<td>192,600</td>
<td>184,100</td>
<td>167,200</td>
<td>141,600</td>
<td>130,800</td>
<td>129,100</td>
<td>-8.2%</td>
</tr>
<tr>
<td>Transportation, utilities, and warehousing</td>
<td>47,200</td>
<td>49,200</td>
<td>49,700</td>
<td>47,200</td>
<td>45,000</td>
<td>45,300</td>
<td>-0.7%</td>
</tr>
<tr>
<td>Trade</td>
<td>209,900</td>
<td>208,000</td>
<td>199,800</td>
<td>185,300</td>
<td>183,800</td>
<td>186,100</td>
<td>-2.1%</td>
</tr>
<tr>
<td>Information</td>
<td>33,900</td>
<td>33,800</td>
<td>31,800</td>
<td>29,100</td>
<td>27,200</td>
<td>26,000</td>
<td>-5.1%</td>
</tr>
<tr>
<td>Financial, insurance, and real estate services</td>
<td>98,000</td>
<td>91,700</td>
<td>84,500</td>
<td>79,200</td>
<td>73,400</td>
<td>70,300</td>
<td>-6.6%</td>
</tr>
<tr>
<td>Services</td>
<td>495,300</td>
<td>504,700</td>
<td>503,100</td>
<td>488,000</td>
<td>481,600</td>
<td>489,700</td>
<td>-0.2%</td>
</tr>
<tr>
<td>Government</td>
<td>313,100</td>
<td>324,400</td>
<td>328,100</td>
<td>322,900</td>
<td>312,800</td>
<td>303,800</td>
<td>-0.5%</td>
</tr>
<tr>
<td>Total for all Industries</td>
<td>1,413,500</td>
<td>1,419,900</td>
<td>1,388,800</td>
<td>1,318,500</td>
<td>1,279,900</td>
<td>1,275,400</td>
<td>-1.8%</td>
</tr>
</tbody>
</table>

Source: California Employment Development Department 2013.

<sup>a</sup> Includes natural resources and mining.

<sup>b</sup> Calculated as the total % growth from 2006 to 2011, divided by 6.

Note: Numbers in parentheses indicate the share as a percentage of the total employment. Percentages may not add to 100% due to independent rounding.
### Table 16-9. Delta Counties and California Income and Poverty Levels, 2006-2010

<table>
<thead>
<tr>
<th>Area</th>
<th>Per Capita Income&lt;sup&gt;a&lt;/sup&gt; (dollars)</th>
<th>Median Household Income&lt;sup&gt;a&lt;/sup&gt; (dollars)</th>
<th>Persons Living Below Poverty Level</th>
<th>Percentage of Population Living Below Poverty Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contra Costa County</td>
<td>37,818</td>
<td>78,385</td>
<td>94,412</td>
<td>9.0%</td>
</tr>
<tr>
<td>Sacramento County</td>
<td>26,953</td>
<td>56,439</td>
<td>197,212</td>
<td>13.9%</td>
</tr>
<tr>
<td>San Joaquin County</td>
<td>22,851</td>
<td>54,341</td>
<td>109,649</td>
<td>16.0%</td>
</tr>
<tr>
<td>Solano County</td>
<td>28,649</td>
<td>68,409</td>
<td>42,988</td>
<td>10.4%</td>
</tr>
<tr>
<td>Yolo County</td>
<td>27,420</td>
<td>57,077</td>
<td>34,345</td>
<td>17.1%</td>
</tr>
<tr>
<td>Delta Counties</td>
<td>29,443</td>
<td>63,516</td>
<td>478,606</td>
<td>12.7%</td>
</tr>
<tr>
<td>(total or population-weighted average)</td>
<td>29,188</td>
<td>60,883</td>
<td>5,103,792</td>
<td>13.7%</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau 2012a.

<sup>a</sup> 2010 inflation-adjusted dollars, using Consumer Price Index.

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#### 16.1.1.5 Government and Finance in the Delta

This section provides background information on local government finance in the Delta region, including counties, cities, and special districts. Public revenues and expenditures are described in more detail for the Delta focuses of Contra Costa, Sacramento, San Joaquin, Solano, and Yolo counties.

Total revenues and expenditures vary substantially among the five Delta counties because of their size, population, level of commercial and industrial development, land uses, and the level and types of services provided. Revenue sources include tax receipts (primarily property taxes), rents, license and permit fees, expenditures of state and federal government funds, charges for services (e.g., water and sewer), and other sources. Revenue ranges from approximately $253 million in Yolo County for fiscal year (FY) 2010–2011 to more than $2.1 billion in Sacramento County (California State Controller’s Office 2012). Table 16-10 presents the revenues in the Delta counties during FY 2010–2011.
Table 16-10. Revenues and Expenditures by Delta Counties during Fiscal Years 2010-2011

<table>
<thead>
<tr>
<th>Type of Revenue or Expenditure</th>
<th>Contra Costa County</th>
<th>Sacramento County</th>
<th>San Joaquin County</th>
<th>Solano County</th>
<th>Yolo County</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenues (all values in millions of dollars)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Property taxes</td>
<td>282.3</td>
<td>326.3</td>
<td>177.3</td>
<td>108.6</td>
<td>40.3</td>
</tr>
<tr>
<td>Other taxes</td>
<td>19.7</td>
<td>106.4</td>
<td>19.7</td>
<td>7.1</td>
<td>4.0</td>
</tr>
<tr>
<td>Licenses, permits, fines, forfeitures, etc.</td>
<td>51.9</td>
<td>95.0</td>
<td>16.1</td>
<td>28.1</td>
<td>16.7</td>
</tr>
<tr>
<td>Federal, State, other</td>
<td>693.8</td>
<td>1,327.4</td>
<td>506.1</td>
<td>314.3</td>
<td>165.2</td>
</tr>
<tr>
<td>Miscellaneous revenue</td>
<td>17.9</td>
<td>51.2</td>
<td>10.4</td>
<td>6.2</td>
<td>4.0</td>
</tr>
<tr>
<td>Other financing sources</td>
<td>265.0</td>
<td>241.5</td>
<td>94.4</td>
<td>89.5</td>
<td>22.9</td>
</tr>
<tr>
<td><strong>Total revenue</strong></td>
<td><strong>1,330.7</strong></td>
<td><strong>2,147.7</strong></td>
<td><strong>823.9</strong></td>
<td><strong>553.8</strong></td>
<td><strong>253.0</strong></td>
</tr>
<tr>
<td><strong>Expenditures (all values in millions of dollars)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Legislative, administrative, finance, counsel, and general expenditures</td>
<td>107.6</td>
<td>131.5</td>
<td>43.0</td>
<td>50.5</td>
<td>28.5</td>
</tr>
<tr>
<td>Police protection, corrections, fire, public protection, etc.</td>
<td>360.3</td>
<td>642.1</td>
<td>261.2</td>
<td>171.2</td>
<td>73.6</td>
</tr>
<tr>
<td>Transportation</td>
<td>89.7</td>
<td>99.8</td>
<td>38.6</td>
<td>14.5</td>
<td>10.0</td>
</tr>
<tr>
<td>Public health, medical care, etc.</td>
<td>224.7</td>
<td>549.4</td>
<td>106.6</td>
<td>104.9</td>
<td>42.1</td>
</tr>
<tr>
<td>Welfare, social services, and other public assistance</td>
<td>390.9</td>
<td>632.1</td>
<td>342.2</td>
<td>157.1</td>
<td>71.6</td>
</tr>
<tr>
<td>Education and library services</td>
<td>23.0</td>
<td>10.1</td>
<td>5.7</td>
<td>17.1</td>
<td>5.9</td>
</tr>
<tr>
<td>Recreation facilities</td>
<td>0.0</td>
<td>14.3</td>
<td>5.6</td>
<td>1.5</td>
<td>1.7</td>
</tr>
<tr>
<td>Principal and interest on long-term debt</td>
<td>67.9</td>
<td>132.1</td>
<td>9.3</td>
<td>29.0</td>
<td>2.6</td>
</tr>
<tr>
<td>Other expenditures</td>
<td>42.3</td>
<td>N/A</td>
<td>18.5</td>
<td>N/A</td>
<td>1.4</td>
</tr>
<tr>
<td><strong>Total expenditures</strong></td>
<td><strong>1,306.3</strong></td>
<td><strong>2,211.4</strong></td>
<td><strong>830.6</strong></td>
<td><strong>545.7</strong></td>
<td><strong>237.3</strong></td>
</tr>
</tbody>
</table>

Source: California State Controller’s Office 2012.

Note: Numbers may not sum due to rounding.

The revenue generated varies by county depending on state and federal allocations, tax rates, property values, special assessments, and other special taxes. Revenue is generated from real property based on the assessed value of the property (allocated according to formulas set by state law) and by other taxes and assessments. Local agencies in each county are permitted to levy additional ad valorem tax rates for repayment of debt that is approved by voters, such as financing for facilities and services like hospitals and schools. As a result of the levy of additional voter-approved debt, tax rates may vary from area to area within any county, depending on the number and amount of debt. A city, county, or other public entity also can form a special assessment district and levy an assessment on real property to finance public improvements or services, infrastructure, or community services. The special district can finance those public improvements that confer a special, measurable, direct benefit to each parcel of the real property in the district.

Special assessment or service districts include benefit assessment districts (e.g., flood control, sewer, and water); abatement districts (e.g., mosquito and vector control); Mello-Roos community...
facilities districts; maintenance districts (e.g., levee, open space, park, and playground); reclamation districts; and community service districts (e.g., fire, police, lighting, and garbage).

Special assessment districts may collect revenues on a one-time basis or on a continuous (usually annual) schedule, depending on the service. Special assessments are not based on property value. Instead, each assessment district includes a benefit formula and each parcel in the service area is assessed according to the specific benefit it receives from the services and improvements. All Delta counties provide some government services, but rely on the special districts to provide other services.

Expenditures by county governments range from approximately $237 million in Yolo County for FY 2010-2011 to approximately $2.2 billion per year in Sacramento County (California State Controller’s Office 2012). Table 16-10 presents the expenditures in Delta counties during FY 2010–2011. Expenditures include payments made by jurisdictions to buy goods, pay employees, and provide services to residents. Many of the differences in the county-level expenditure per capita and the pattern of expenditures result from the counties’ demographic composition. Also, the services provided by county-level governments versus city governments or special districts vary from county to county. Note that education is a relatively small part of the counties’ budgets. Most local education spending is handled by school districts, not by the counties.

Contra Costa County

In FY 2010–2011, Contra Costa County received more than $1.33 billion in total revenue. The largest source of revenue was federal and state funding, which provided more than $693 million. Property taxes represented more than $282 million in revenues. Revenues generated by Contra Costa County are used for a range of governmental activities.

Expenditures in FY 2010–2011 totaled more than $1.30 billion. Table 16-10 displays the total expenditures for Contra Costa County in several categories. Welfare, social services, and other public assistance consistently have been the largest expenditures for Contra Costa County (more than $391 million in FY 2010–2011). Police and fire protection and other public safety activities represented the second largest expenditure category.

Sacramento County

Sacramento County’s total revenues exceeded $2.1 billion in FY 2010–2011. Federal and state funding sources made up the largest revenue source, with more than $1.32 billion directed to Sacramento County. Property taxes provided the second largest revenue source (more than $326 million in FY 2010–2011).

As shown in Table 16-10, Sacramento County’s budget expenditures were similar in pattern to those of Contra Costa County. The top two expenditures in Sacramento County in FY 2010–2011 were for public safety programs ($642 million) and social service programs ($632 million). A substantial portion of its budget also funded public health and medical services ($549 million).

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3 The Mello-Roos Act of 1982 provides a mechanism for certain public entities, such as cities, counties, schools, local districts, and joint power authorities, to finance public infrastructure and certain governmental services. The public entity forms a community facilities district and may levy a special tax on the real property within its boundaries. The district can apply the special tax revenues, or proceeds from bonds secured by special taxes, to finance general benefit facilities and services or special benefit improvements.
San Joaquin County

San Joaquin County received more than $823 million in total revenues in FY 2010–2011. The largest source of revenue was federal and state funding of more than $506 million. Property taxes represented the second largest revenue source for San Joaquin County at more than $177 million.

Expenditures in FY 2010–2011 totaled more than $830 million. Welfare, social services, and other public assistance were the largest expenditure at more than $342 million. Public safety activities represented the second largest expenditure category, with more than $261 million spent in FY 2010–2011.

Solano County

Many of the observations previously discussed for other counties also apply to Solano County. Federal and state funding made up more than half of Solano County’s revenue, totaling more than $314 million in FY 2010–2011. Property taxes provided another 20% of its revenue at more than $108 million in FY 2010–2011.

Expenditure patterns in Solano County are generally consistent with trends observed in other counties. The top two expenditure categories in Solano County in FY 2010–2011 were social service programs ($157 million) and public safety programs ($171 million).

Yolo County

Yolo County revenues were more than $253 million in FY 2010–2011. The largest source of revenue was federal and state funding, which contributed more than $165 million. Property taxes represented the second largest revenue source for Yolo County in FY 2010–2011 (more than $40 million dollars).

Expenditures in FY 2010-2011 totaled more than $237 million. Police protection functions represented the largest expenditures for Yolo County (more than $73 million in FY 2010–2011). Public assistance activities represented the second largest expenditure category, costing more than $71 million in FY 2010–2011.

16.1.1.6 Economic Character of Recreation in the Delta

The recreation industry in the Delta is composed primarily of boating, fishing, hunting, camping, and agritourism activities. Specific businesses directly support recreation in the Delta, including marinas, boat rentals, guide services, and wineries. Other businesses, such as hotels, restaurants, specialty stores, and sporting goods retailers, provide general recreation and tourism goods and services to users in the Delta region, including Delta recreationists among others.

The recreation-oriented focus of the Delta leads to an interdependent relationship between the different businesses. Fishing guides and boaters depend on the marinas for supplies and fuel. Marinas without food services rely on local food markets or restaurants to serve visitors. Restaurants and wineries depend on hotels to provide accommodations for overnight or extended visits. All the businesses depend on visitors and tourists spending time and money in the Delta.
Socioeconomics

Source of Contributions to the Delta Economy

Attendance at special events in the Delta typically ranges from several hundred to several thousand people. In 2010, the Stockton Asparagus Festival, one of the region's largest events, had an estimated 85,000 people in attendance over the 3-day event. For some events in the Delta, attendees travel by boat. A portion of the economic activity generated during these events is captured in the agritourism and the boating-related economic estimates described below.

Heritage tourism involves traveling to experience an area’s historic, cultural, and natural resources (National Trust for Historic Preservation 2010). Examples include visits to historic sites, national and state parks, museums, festivals, and other cultural events (D. K. Shiflett and Associates 2000). Heritage tourism in the Delta occurs in small historic towns along the Sacramento River that developed as steamboat landings during the Gold Rush. Freeport, Clarksburg, Hood, Courtland, Locke, Walnut Grove, Ryde, Isleton, and Rio Vista are all considered legacy towns.

There are 98 hotels in the Delta with a total of 5,036 rooms. In the five-county region, there are 406 hotel properties with a total of 33,402 rooms. Slightly less than a quarter of all hotels and roughly 15% of all rooms within the five-county region are in the Delta. There are 2,955 restaurants (Eating and Drinking Places) within the five-county region. These restaurants employ an estimated 44,073 people, and are concentrated in Sacramento County, primarily in the City of Sacramento (AECOM 2011).

The Delta provides approximately 7.4 million visitor-days of recreational use (Plater and Wade 2002). Projections indicate that visitation will reach more than 8.0 million visitor-days by 2020 (Plater and Wade 2002). Based on state population growth trends, it was estimated that Delta visitation could reach 11.8 million visitor-days by 2060.

A total of 86 marinas are located in the Delta. These marinas are concentrated in Contra Costa, Sacramento, and San Joaquin counties, with a few located in Solano and Yolo counties. Contra Costa County has the most marinas (34) and Solano County has the fewest (2) within the Delta. However, marinas in San Joaquin County are typically larger and have more berths on average (155) than marinas in other counties, and marinas in Contra Costa County have fewer (111). In addition to providing boat launching, berthing, fuel, and boat rentals, many marinas also provide ancillary amenities and services, such as picnic areas, trails, and camping facilities.

Recreation-Related Industry Employment and Sales

Table 16-11 summarizes the employment and economic activity for recreation-related industries, and identifies the proportion of the recreation-related industries in the total Delta region economy. Employment estimates for 2009 were obtained from a private demographic and economic data provider (Claritas MarketPlace), which aggregates and apportions economic census data from the U.S. Census Bureau (AECOM 2011). The following categories of businesses are listed in Table 16-11: Food Stores; Eating and Drinking Places; Hotels and Other Lodging Places; Amusement and Recreational Services; and Museums, Art Galleries, Zoos.

<table>
<thead>
<tr>
<th>SIC Code</th>
<th>Business Description</th>
<th>Total Establishments</th>
<th>Total Employees</th>
<th>Sales (in Millions of Dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>54</td>
<td>Food Stores</td>
<td>1,045</td>
<td>16,871</td>
<td>$2,443</td>
</tr>
<tr>
<td>58</td>
<td>Eating and Drinking Places</td>
<td>2,955</td>
<td>44,073</td>
<td>$1,950</td>
</tr>
<tr>
<td>70</td>
<td>Hotels and Other Lodging Places</td>
<td>287</td>
<td>5,631</td>
<td>$217</td>
</tr>
<tr>
<td>79</td>
<td>Amusement and Recreational Services (e.g., Movies)</td>
<td>953</td>
<td>11,940</td>
<td>$960</td>
</tr>
<tr>
<td>84</td>
<td>Museums, Art Galleries, Zoos</td>
<td>48</td>
<td>854</td>
<td>$23</td>
</tr>
<tr>
<td><strong>Total Recreation-Related Industries</strong></td>
<td><strong>5,288</strong></td>
<td><strong>79,369</strong></td>
<td></td>
<td><strong>$5,594</strong></td>
</tr>
</tbody>
</table>

| Total All Industries | **50,415** | **635,262** | **$61,944** |

Recreation-Related Industries as a percent of Total: 10.5% / 12.5% / 9.0%

Source: AECOM 2011
Note: Values are presented in 2007 dollars.
SIC = Standard Industrial Classification

In the Delta region's economy, the 5,288 recreation-related establishments make up approximately 10.5% of total establishments and support about 79,369 employees, or approximately 12.5% of total employees. The Delta recreation-related industries contribute about $5.8 billion in annual revenues, or about 9% of revenues for all industries (approximately $65 million).

The estimates in Table 16-11 include economic activity not related to recreation, so the totals overstate the contribution of recreational activities in the Delta. For example, most establishments in the Food Stores and Eating and Drinking Places categories receive only a portion of their sales from recreation-related visits in the Delta; local residents and other business employees often generate a substantial share.

Direct Economic Contributions from Recreation in the Delta Region

Direct economic contributions from recreation in the Delta were projected based on visitation and visitor-related spending in the Delta, recreation-related spending attributable to activities in Suisun Marsh and Yolo Bypass, marina leasing revenue, and agritourism in the Delta. Visitor-related spending in the Delta was estimated using per-day expenditure profiles developed based on the average expenditures reported by boaters, anglers, and day use/other recreationists participating in wildlife- or water-associated activities. Delta visitation estimates for 1997–2020 by recreational activity, as presented in Plater and Wade (2002), were used in the analysis. Visitation projections between 2020 and 2060 were based on the California Department of Finance (DOF) forecast rate of population growth in the five-county region from 2020 to 2050. A linear trend analysis was used to project population changes and associated visitation from 2050 to 2060 (AECOM 2011).

Recreation-oriented activities in the Delta were estimated to contribute approximately $236.3 million in direct expenditures in 2010. These direct expenditures are expected to grow to approximately $256 million by 2020, $269.9 million by 2025, and $375.4 million by 2060.

As shown in Table 16-12, boating activity accounts for the largest share of total recreation-related economic contributions in the Delta.
Table 16-12. Projected Direct Economic Contributions from Recreation in the Delta

<table>
<thead>
<tr>
<th>Recreation Activity</th>
<th>2010</th>
<th>2020</th>
<th>2025</th>
<th>2060</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water-Based Recreation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boating</td>
<td>$157,837,000</td>
<td>$170,277,000</td>
<td>$180,248,000</td>
<td>$246,006,000</td>
</tr>
<tr>
<td>Angling/Fishing</td>
<td>$25,490,000</td>
<td>$27,674,000</td>
<td>$29,294,000</td>
<td>$39,981,000</td>
</tr>
<tr>
<td>Day Use</td>
<td>$20,528,000</td>
<td>$22,240,000</td>
<td>$23,542,000</td>
<td>$32,131,000</td>
</tr>
<tr>
<td>Marina Lease Revenue</td>
<td>$25,610,000</td>
<td>$28,623,000</td>
<td>$29,412,000</td>
<td>$40,812,000</td>
</tr>
<tr>
<td>Non-Water-Based Recreation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suisun Marsh and Yolo Bypass Revenue</td>
<td>$4,287,000</td>
<td>$4,287,000</td>
<td>$4,287,000</td>
<td>$4,287,000</td>
</tr>
<tr>
<td>Agritourism</td>
<td>$2,500,000</td>
<td>$2,900,000</td>
<td>$3,100,000</td>
<td>$4,800,000</td>
</tr>
<tr>
<td>Total Estimated Recreation Economic Contribution</td>
<td>$236,252,000</td>
<td>$256,001,000</td>
<td>$269,883,000</td>
<td>$375,455,000</td>
</tr>
</tbody>
</table>

Source: AECOM 2011.
Note: Values are presented in 2007 dollars and rounded to the nearest $1,000.

16.1.1.7 Economics of Agriculture in the Delta

Agriculture is one of the more important sectors of the Delta economy. Related information on agricultural land use, soils, and production practices is provided in Chapter 14, Agricultural Resources, Sections 14.1.1.3 through 14.1.1.6, which summarizes agricultural land uses and production practices using information from county, state, and federal sources. The aggregate employment data presented earlier in this section (see Table 16-8) suggest that agriculture is a fairly small employment sector relative to other sectors at the county level, such as government and retail trade. Part of the explanation for this is that the counties include cities such as Sacramento, Stockton, and Antioch. By their nature, cities are concentrations of non-rural economic activity.

County-level data summaries that include the cities tend to diminish the important role of agriculture in more rural areas of the counties, such as the statutory Delta. Commercial agriculture and the associated agricultural services, packing, processing, marketing, insuring, and transportation activities are critical components of the Delta region’s economic and social character. The economic production of Delta agriculture is multiplied through the regional economy through these activities.

Irrigated Land

Crop acreages in the statutory Delta and Restoration Opportunity Areas (ROAs) are described in Chapter 14, Agricultural Resources, Table 14-2. The major crops, ranked by acreage, are corn, alfalfa, grain, safflower, irrigated pasture, tomatoes, asparagus, and grapes.

Nearly 70,000 acres are planted with perennial crops such as fruit trees and grapevines, which have a large fixed investment in growing stock with an economic life of 20 years or more; and asparagus, which has a lower initial investment and produces for up to 10 years. More than one third (38%) of the Plan Area’s irrigated acreage is in San Joaquin County; Solano County has the second largest share (21%), with the remainder split among Sacramento, Contra Costa, and Yolo Counties (see Chapter 14, Agricultural Resources, Section 14.1.4, for further descriptions).
Yields, Prices, and Value of Production

Annual crop reports generated by the county agricultural commissioners were gathered from the five Delta counties (California Department of Food and Agriculture 2010). The counties report average crop yields and prices for the entire county, not specifically for the statutory Delta. However, crop markets are regional rather than specific to a subregion of a county, so the county-wide averages for crop prices are representative. Average yields, prices, and value of production per acre for 2005 to 2007 are shown in Table 16-13.

Most of the crop categories listed in Table 16-13 are dominated by one crop, such as alfalfa hay. Some categories include more than one crop, so either a dominant crop or a crop that is considered representative within that category is used as a proxy crop. For example, pumpkins make up the largest acreage of crops in the cucurbit category, so they are used for displaying yield per acre, price per unit, and production value per acre.

Total value of production is summarized in Table 16-14, with crop categories further aggregated into small grains (including rice); field crops; forage (alfalfa and pasture); all vegetable, truck, and other specialty crops (including turf); and all orchards and vineyards. Percentage shares by acreage and by value of production are shown below the totals. The value of production is based on the reported acreage and the per-acre value shown in Table 16-13. Therefore, the values are farm revenues expressed in the 2007 equivalent price level, but using average prices and yields for 2005 through 2007.

The total value of irrigated crop production in the Delta is more than $600 million per year. Two categories—vegetable, truck, and specialty crops and orchards and vineyards—account for more than $400 million per year, and these crops are produced on a little over one-quarter of the crop acreage.

Livestock production in the Delta includes feed lots, dairies, and poultry farms. The California Department of Water Resources' (DWR's) Delta Risk Management Strategy Phase 1 Report (California Department of Water Resources 2008b) estimated that livestock production in the Delta represented 13% of the total value of agricultural production over the period from 1998 to 2004. Assuming that this percentage is still reasonably accurate, livestock would provide an additional $90.6 million per year, for an annual total of $697 million in crop and livestock value.
Table 16-13. Crop Yields, Prices, and Value per Acre in the Delta Counties, 2005–2007

<table>
<thead>
<tr>
<th>Crop</th>
<th>Acreage</th>
<th>Yield (tons per acre)</th>
<th>Price ($ per ton)</th>
<th>Value per Acre ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn</td>
<td>114,108</td>
<td>4.62</td>
<td>128</td>
<td>591</td>
</tr>
<tr>
<td>Alfalfa</td>
<td>69,868</td>
<td>6.51</td>
<td>139</td>
<td>907</td>
</tr>
<tr>
<td>Grain and hay&lt;sup&gt;a&lt;/sup&gt;</td>
<td>51,343</td>
<td>2.29</td>
<td>129</td>
<td>297</td>
</tr>
<tr>
<td>Safflower</td>
<td>50,157</td>
<td>1.18</td>
<td>281</td>
<td>333</td>
</tr>
<tr>
<td>Pasture</td>
<td>42,863</td>
<td>N/A</td>
<td>N/A</td>
<td>113</td>
</tr>
<tr>
<td>Tomatoes</td>
<td>37,850</td>
<td>37.39</td>
<td>57</td>
<td>2,121</td>
</tr>
<tr>
<td>Asparagus</td>
<td>24,064</td>
<td>1.41</td>
<td>2,480</td>
<td>3,501</td>
</tr>
<tr>
<td>Grapes</td>
<td>22,095</td>
<td>5.34</td>
<td>544</td>
<td>2,903</td>
</tr>
<tr>
<td>Dry Beans</td>
<td>10,140</td>
<td>1.00</td>
<td>723</td>
<td>724</td>
</tr>
<tr>
<td>Sugar Beets</td>
<td>7,770</td>
<td>32.50</td>
<td>39</td>
<td>1,257</td>
</tr>
<tr>
<td>Pears</td>
<td>7,621</td>
<td>18.34</td>
<td>221</td>
<td>4,060</td>
</tr>
<tr>
<td>Rice&lt;sup&gt;b&lt;/sup&gt;</td>
<td>7,298</td>
<td>3.76</td>
<td>268</td>
<td>1,008</td>
</tr>
<tr>
<td>Miscellaneous truck crops&lt;sup&gt;c&lt;/sup&gt;</td>
<td>7,199</td>
<td>80.54</td>
<td>65</td>
<td>5,255</td>
</tr>
<tr>
<td>Cucurbits&lt;sup&gt;d&lt;/sup&gt;</td>
<td>6,424</td>
<td>14.76</td>
<td>247</td>
<td>3,641</td>
</tr>
<tr>
<td>Walnuts</td>
<td>5,170</td>
<td>1.58</td>
<td>1,722</td>
<td>2,713</td>
</tr>
<tr>
<td>Sudan</td>
<td>4,753</td>
<td>1.26</td>
<td>528</td>
<td>666</td>
</tr>
<tr>
<td>Almonds</td>
<td>2,472</td>
<td>0.80</td>
<td>4,600</td>
<td>3,689</td>
</tr>
<tr>
<td>Apples</td>
<td>2,435</td>
<td>13.98</td>
<td>615</td>
<td>8,597</td>
</tr>
<tr>
<td>Miscellaneous field crops&lt;sup&gt;e&lt;/sup&gt;</td>
<td>2,326</td>
<td>2.16</td>
<td>106</td>
<td>228</td>
</tr>
<tr>
<td>Apricots</td>
<td>2,041</td>
<td>7.82</td>
<td>387</td>
<td>3,025</td>
</tr>
<tr>
<td>Sunflowers</td>
<td>1,850</td>
<td>0.21</td>
<td>3,252</td>
<td>690</td>
</tr>
<tr>
<td>Turf&lt;sup&gt;f&lt;/sup&gt;</td>
<td>1,630</td>
<td>N/A</td>
<td>N/A</td>
<td>15,151</td>
</tr>
<tr>
<td>Miscellaneous deciduous&lt;sup&gt;g&lt;/sup&gt;</td>
<td>1,060</td>
<td>2.11</td>
<td>2,320</td>
<td>4,902</td>
</tr>
<tr>
<td>Cherries</td>
<td>739</td>
<td>2.10</td>
<td>3,980</td>
<td>8,354</td>
</tr>
<tr>
<td>Peaches and Nectarines</td>
<td>309</td>
<td>20.32</td>
<td>259</td>
<td>5,263</td>
</tr>
<tr>
<td>Subtropical trees&lt;sup&gt;h&lt;/sup&gt;</td>
<td>81</td>
<td>13.75</td>
<td>683</td>
<td>9,388</td>
</tr>
</tbody>
</table>

**Total Irrigated Crops**  483,666

Sources: Acreages are from California Department of Water Resources 2007; prices, yields, and values are from California Department of Food and Agriculture 2010.

Note: All dollar values are escalated to the 2007 equivalent price level using the Gross Domestic Product Implicit Price Deflator (U.S. Department of Commerce 2010).

<sup>a</sup> Wheat is used as the example crop in this category.

<sup>b</sup> Medium grain rice is used as the example crop in this category.

<sup>c</sup> Bell peppers are used as the example crop in this category.

<sup>d</sup> Pumpkins are used as the example crop in this category.

<sup>e</sup> Grain sorghum is used as the example crop in this category.

<sup>f</sup> Turf prices and values are not reported for Delta counties. The statewide average for all counties reporting both acreage and value is used.

<sup>g</sup> Plums are used as the example crop in this category.

<sup>h</sup> Citrus price and yield from the San Joaquin Valley are used.
Table 16-14. Total Value of Production for Crops in the Delta

<table>
<thead>
<tr>
<th>Crop Category</th>
<th>Acreage (Percentage of Total)</th>
<th>Value of Production in Million $ per Year (Percentage of Total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grains</td>
<td>58,641 (12.1%)</td>
<td>22.6 (3.7%)</td>
</tr>
<tr>
<td>Field crops</td>
<td>191,104 (39.5%)</td>
<td>106.2 (17.5%)</td>
</tr>
<tr>
<td>Forage crops</td>
<td>112,731 (23.3%)</td>
<td>68.2 (11.2%)</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>77,167 (16.0%)</td>
<td>250.4 (41.3%)</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>44,023 (9.1%)</td>
<td>159.1 (26.2%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>483,666</td>
<td><strong>606.5</strong></td>
</tr>
</tbody>
</table>

Sources: California Department of Water Resources 2007; California Department of Food and Agriculture 2010.

Note: Value of production is based on prices received by farmers, in 2007 dollars (U.S. Department of Commerce 2010).

Costs of Production and Labor Use for Selected Crops

Costs of irrigated crop production include labor, purchased inputs (e.g., seed, fertilizer, chemicals), custom services, investment in growing stock, other capital (including machinery and structures), and other overhead costs.

Croplands that may be affected by BDCP alternative activities have benefited from substantial investments in land, structures, and growing stock of perennial crops. Perennial crops such as orchards and vineyards may have useful lives of 25 years or more, and asparagus and multiyear forage crops also have years of production value. Investment in growing stock may be expressed as the accumulated costs incurred during the period when the crop is planted and brought to bearing age, called the establishment period. Establishment costs for perennial crops can range up to $20,000 per acre (cash outlays plus noncash and allocated overhead costs). Table 16-15 provides typical establishment costs for some major perennial crops grown in the Delta.
Table 16-15. Typical Establishment Costs for Example Perennial Crops in the Delta

<table>
<thead>
<tr>
<th>Example Crop</th>
<th>Establishment Period (years)</th>
<th>Assumed Life of Stand (years)</th>
<th>Accumulated Total Cost during Establishment ($ per acre)</th>
<th>University of California Cooperative Extension Cost of Production Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa hay</td>
<td>1</td>
<td>4</td>
<td>421</td>
<td>Sacramento Valley, 2008</td>
</tr>
<tr>
<td>Almonds</td>
<td>3</td>
<td>25</td>
<td>7,418</td>
<td>San Joaquin Valley North, 2006</td>
</tr>
<tr>
<td>Asparagus</td>
<td>2</td>
<td>10</td>
<td>2,442</td>
<td>San Joaquin County, 2007</td>
</tr>
<tr>
<td>Bartlett pears</td>
<td>5</td>
<td>30</td>
<td>20,015</td>
<td>Sacramento County, 2003</td>
</tr>
<tr>
<td>Irrigated pasture</td>
<td>1</td>
<td>20</td>
<td>380</td>
<td>Sacramento Valley, 2003</td>
</tr>
<tr>
<td>Walnuts</td>
<td>4</td>
<td>25</td>
<td>10,450</td>
<td>San Joaquin Valley North, 2007</td>
</tr>
<tr>
<td>Wine grapes</td>
<td>3</td>
<td>25</td>
<td>12,802</td>
<td>Cabernet Sauvignon, San Joaquin Valley North, Delta Crush District 11, 2008</td>
</tr>
</tbody>
</table>


Notes: Costs are converted to 2007 dollar equivalent values using the Gross Domestic Product Implicit Price Deflator (U.S. Department of Commerce 2010). Assumed stand life is the financial life used for the cost and budget analysis. Individual growers may decide to keep stands in production longer or to remove them sooner.

Farm expenditures are largely spent in the surrounding community in the form of input purchases, hired labor, rents paid to landlords, and custom services. Total labor in the agricultural production sector and associated input and processing sectors have been summarized, but crops vary substantially in the amount of labor hours and input purchases required, as shown in Table 16-16.
Table 16-16. Land Rent, Labor Hours\(^a\), and Custom Services for Example Crops in the Delta

<table>
<thead>
<tr>
<th>Example Crop</th>
<th>Typical Annual Land Costs ($ per acre)</th>
<th>Typical Annual Labor (hours per acre)</th>
<th>Custom Services Purchased ($ per acre)</th>
<th>University of California Cooperative Extension Cost of Production Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa hay</td>
<td>288</td>
<td>2.0</td>
<td>301</td>
<td>Sacramento Valley, 2008</td>
</tr>
<tr>
<td>Almonds</td>
<td>812</td>
<td>28.9</td>
<td>720</td>
<td>San Joaquin Valley North, 2006</td>
</tr>
<tr>
<td>Asparagus</td>
<td>300</td>
<td>119.5</td>
<td>1,915</td>
<td>San Joaquin County, 2007</td>
</tr>
<tr>
<td>Bartlett pears</td>
<td>605</td>
<td>103.0</td>
<td>6,009</td>
<td>Sacramento County, 2003</td>
</tr>
<tr>
<td>Corn, Grain</td>
<td>180</td>
<td>11.0</td>
<td>9</td>
<td>Sacramento Valley, 2008</td>
</tr>
<tr>
<td>Dry beans</td>
<td>181</td>
<td>12.0</td>
<td>213</td>
<td>Sacramento Valley, 2008</td>
</tr>
<tr>
<td>Irrigated pasture</td>
<td>59</td>
<td>2.8</td>
<td>148</td>
<td>Sacramento Valley, 2003</td>
</tr>
<tr>
<td>Safflower</td>
<td>61</td>
<td>2.5</td>
<td>0</td>
<td>Sacramento Valley, 2005</td>
</tr>
<tr>
<td>Walnuts</td>
<td>916</td>
<td>12.3</td>
<td>986</td>
<td>San Joaquin Valley North, 2007</td>
</tr>
<tr>
<td>Tomatoes, processing</td>
<td>265</td>
<td>53.0</td>
<td>22</td>
<td>Sacramento Valley, 2007</td>
</tr>
<tr>
<td>Wheat</td>
<td>90</td>
<td>3.3</td>
<td>7</td>
<td>Sacramento Valley, 2004</td>
</tr>
<tr>
<td>Wine grapes</td>
<td>872</td>
<td>93.0</td>
<td>417</td>
<td>Cabernet Sauvignon, San Joaquin Valley North, Delta Crush District 11, 2008</td>
</tr>
</tbody>
</table>


Note: Costs are converted to 2007 dollar equivalent values using the Gross Domestic Product Implicit Price Deflator (U.S. Department of Commerce 2010). Some labor hours may also be included in custom services payments.

\(^a\) Significant labor hours are usually included in custom service payments.

In general, fruit, nut, and vegetable crops require the greatest amount of labor per acre, largely related to cultivation, harvest, and pruning efforts. Land rents may involve an actual cash payment or crop share payment, or they may be the imputed rental value of owned land. Custom services include hired services for pest control, land leveling, harvesting, and field packing. The typical labor hours shown are only those that have been itemized in the University of California Cooperative Extension cost of production studies. Additional labor is associated with the custom services provided.

All costs displayed in the tables are representative of well-run farming operations. Substantial variation exists among farming operations.

**Farm Size, Revenue, and Government Payments**

The U.S. Census of Agriculture is conducted every five years and collects information on farm numbers, sizes, costs and revenues, government payments, and owner characteristics. Average farm sizes and revenues for the five Delta counties are shown in Table 16-17. A small increase in average farm size during recent years has occurred in most of the Delta counties, with an expected average value of production per farm increasing.

The values for San Joaquin and Contra Costa Counties are likely to be more representative of Delta farms because greater proportions of those two counties' total farmland lie in the Delta. Government
payments include payments for federally-supported commodities, cost-sharing payments for soil and water conservation investments, and payments for participating in programs such as the Conservation Reserve. A portion of the commodity payments may be reflected directly or indirectly in market prices for government program commodities, as shown in Table 16-13. Important federally supported commodities in California include cotton, rice, small grains, corn, and oilseeds. On average, less than ten percent of the value produced per farm in 2007 is attributable to government payments, as shown in Table 16-17.

Table 16-17. Average Farm Sizes and Revenues in Delta Counties, 2002 and 2007

<table>
<thead>
<tr>
<th>County</th>
<th>Year</th>
<th>Average Farm Size (acres)</th>
<th>Average Value of Production per Farm ($)</th>
<th>Average Value of Government Payments per Farm ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contra Costa</td>
<td>2007</td>
<td>232</td>
<td>111,687</td>
<td>10,079</td>
</tr>
<tr>
<td></td>
<td>2002</td>
<td>213</td>
<td>175,690</td>
<td>7,892</td>
</tr>
<tr>
<td>Sacramento</td>
<td>2007</td>
<td>236</td>
<td>248,485</td>
<td>23,579</td>
</tr>
<tr>
<td></td>
<td>2002</td>
<td>208</td>
<td>182,328</td>
<td>24,797</td>
</tr>
<tr>
<td>San Joaquin</td>
<td>2007</td>
<td>204</td>
<td>431,665</td>
<td>14,343</td>
</tr>
<tr>
<td></td>
<td>2002</td>
<td>202</td>
<td>350,083</td>
<td>24,646</td>
</tr>
<tr>
<td>Solano</td>
<td>2007</td>
<td>403</td>
<td>274,489</td>
<td>14,769</td>
</tr>
<tr>
<td></td>
<td>2002</td>
<td>384</td>
<td>240,468</td>
<td>20,383</td>
</tr>
<tr>
<td>Yolo</td>
<td>2007</td>
<td>488</td>
<td>390,864</td>
<td>28,157</td>
</tr>
<tr>
<td></td>
<td>2002</td>
<td>519</td>
<td>343,124</td>
<td>31,199</td>
</tr>
</tbody>
</table>

Note: All values are converted to 2007 dollars using the Gross Domestic Product Implicit Price Deflator (U.S. Department of Commerce 2010).

* Farm size in the Census definition includes all land, including farmsteads, rangeland, and idle land.

16.2 Regulatory Setting

This section provides the regulatory setting for socioeconomic conditions of communities, including potentially relevant federal, state, and local requirements applicable to the BDCP. Generally, economic resources are protected and regulated by federal and state legislation, and local policies and ordinances at the county and city level regulate population growth, housing development, and industry creation. Planning efforts at local and regional levels can also influence socioeconomic forces through land use controls and other policies.

16.2.1 Federal Plans, Policies, and Regulations

Federal policies and regulations that affect socioeconomic conditions and are applicable to implementation of BDCP alternatives address protection of property, property acquisition by agencies, agricultural economic protections, and county and city general plans that protect housing opportunities. Federal and state water contracts and agreements with communities and agricultural users also affect socioeconomic conditions, and are described in Chapter 5, Water Supply, Section 5.1.2.5. State and local agencies’ programs to protect agriculture, including the Delta Protection
Commission Land Use and Resource Management Plan (Delta Protection Commission 2011), also affect socioeconomics, and are described in Chapter 13, Land Use, Sections 13.2.2 and 13.2.3.

16.2.1.1 Constitution of the United States: Fifth Amendment Takings Clause

The takings clause of the Fifth Amendment provides that “[n]o person shall be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation.” The takings clause does not prohibit government from taking private property; it requires that property owners be compensated for the value of the property taken. According to the U.S. Supreme Court, the takings clause “was designed to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole” (Armstrong v. United States [1960] 364 U.S. 40, 49). The taking of private property by the government can occur in a number of ways: by direct appropriation, by occupation or invasion, or by regulation (regulatory taking).

Government exactions may be considered unconstitutional takings if they do not meet the “reasonable relationship nexus” test, as set out in Dolan v. City of Tigard (1994) 512 U.S. 374 and Nollan v. California Coastal Commission (1987) 483 U.S. 825. In order for an exaction to be valid: (1) the legislation must serve a legitimate governmental purpose; and (2) the means used to achieve the objective must substantially advance the intended purpose.

16.2.1.2 Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970

Title II, Uniform Relocation Assistance, Section 201 (b), establishes a uniform policy for the fair and equitable treatment of persons displaced as a direct result of programs or projects undertaken by a federal agency or with federal financial assistance. The primary purpose of this title is to ensure that such persons shall not suffer disproportionate injuries as a result of programs and projects designed for the benefit of the public as a whole and to minimize the hardship of displacement on such persons.

Title III, Uniform Real Property Acquisition Policy, Section 301, was developed “In order to encourage and expedite the acquisition of real property by agreements with owners, to avoid litigation and relieve congestion in the courts, to assure consistent treatment for owners in the many federal programs, and to promote public confidence in federal land acquisition practices.”

16.2.1.3 Housing and Community Development Act of 1974

Under Section 104(d) of the Housing and Community Development Act of 1974, as amended (Public Law 93-383, 42 USC 5301 et seq.) and the implementing regulations at 24 Code of Federal Regulations Part 42, a residential anti-displacement and relocation assistance plan is required and must provide for: (1) one-for-one replacement of occupied and vacant occupiable low- and moderate-income dwelling units demolished or converted to another use in connection with a development project assisted under Parts 570 and 92; and (2) provide relocation assistance for all low- and moderate-income persons who occupied housing that is demolished or converted to a use other than low- or moderate-income housing.
16.2.1.4  U.S. Department of Agriculture

The U.S. Department of Agriculture administers and implements several programs that can influence both how the agricultural sector may react to changes in water supply availability or agricultural lands, and how large the direct economic effects on agriculture might be. These programs include the direct and countercyclical payments program, commonly referred to as the farm commodity programs (U.S. Department of Agriculture 2008a), and the Conservation Reserve Program and similar programs. This section briefly describes important parts of the farm program.

The current farm commodity programs are defined in the Food, Conservation, and Energy Act of 2008, passed by Congress and signed into law in 2008. This law, commonly referred to as the Farm Bill, authorizes the programs for the next 5 years. At any time, Congress may, with the President’s approval, extend, modify, restructure, or eliminate one or more programs.

The current Farm Bill (U.S. Department of Agriculture 2008b) contains 15 titles that describe and authorize one or more specific programs. Key programs include the following.

1. Commodity Programs. Certain agricultural commodities receive price supports and/or direct payments under the 2008 Farm Bill. These include corn, cotton, rice, small grains, grain sorghum, oilseeds, dry peas/lentils, and sugar crops (other crops also are included but are not grown in California). Under these crop programs, benefits are paid to producers with eligible historical acreage (called Base Acres) of covered commodities. Some of these payments are available even if the program commodity is no longer grown on that base acreage; however, conversion of the land to nonagricultural uses generally eliminates all commodity program payments.

2. Conservation Reserve and Wetland Reserve Programs. These programs provide annual payments to farmers willing to enter long-term contracts to maintain vegetative cover on eligible lands or to restore wetlands on previously agricultural land. They also provide cost-sharing and other financial assistance for soil conservation, water conservation, and wildlife conservation activities.

3. Marketing and Credit Assistance. Numerous programs are designed to provide direct assistance, credit guarantees, and loans to support agriculture.

4. Crop Insurance and Disaster Assistance. These programs provide subsidized crop insurance to farmers and provide disaster assistance payments to crop and livestock producers in declared disaster counties.

16.2.2  State Plans, Policies, and Regulations

16.2.2.1  California Constitution: Article 1 Declaration of Rights, Section 19

Under the California Constitution and other statutes, public agencies may use eminent domain power to: (1) acquire private property (real, business, personal, tangible, or intangible property); or (2) reduce the economic value of property for a public purpose (these are referred to as “damages”) if they pay “just compensation” to the owner. Just compensation includes: (1) the fair market value of the real property and its improvements; and (2) any diminution in value of the remaining property when property taken is part of a larger parcel.
16.2.2.2 Williamson Act

The California Land Conservation Act (Williamson Act) is an agricultural land protection program enacted by the California Legislature in 1965 to maintain the agricultural economy of the state by preserving its agricultural land. The act discourages premature and unnecessary conversion of agricultural land to urban uses. Cities and Counties implement the legislation by creating agricultural preserves, which are generally comprised of at least 100 acres of farmland. Once a preserve has been established, an individual landowner can enter into a contract with the county, which binds the land to remain in agricultural uses for at least ten years. Counties have continuing roles in administering the act with respect to compatibility guidelines and nonrenewal or cancellation of contracts.

Most California counties, including all Delta and San Joaquin Valley counties, allow owners of agricultural land to sign rolling, 10-year agreements with the county that restrict the land to agricultural and open space uses. In return, the landowner receives a lower property tax assessment that reflects the value of the land in agricultural use. According to the California Department of Conservation, the annual property tax savings can range from 20 to 75%. The county must approve the cancellation of an existing contract, and the landowner must pay a cancellation fee equal to 12.5% of the current fair market value of the property. If land in a Williamson Act contract is acquired by a public agency for a defined public purpose, the act provides a process for cancellation of the contract (California Department of Conservation 2006). Additional detail, including a summary of recent legislation, is provided in Chapter 14, Agricultural Resources, Section 14.2.2.5.

16.2.2.3 Economic Sustainability Plan for the Sacramento-San Joaquin Delta (Draft)

In November 2009, the California Legislature enacted SB 1 X7, also known as the Sacramento–San Joaquin Delta Reform Act (Delta Reform Act). The bill required the Delta Protection Commission to adopt an Economic Sustainability Plan (ESP) containing public safety recommendations; economic goals, policies, and objectives in local general plans and other local economic efforts; comments and recommendations to DWR concerning its update of the Delta flood management plan; and identification of ways to encourage recreational investment along key river corridors. The plan covers the Legal Delta. The Delta Reform Act required the Delta Protection Commission to submit the completed ESP to the Delta Stewardship Council (DSC), which was required to consider the recommendations included therein and to adopt any recommendations that the DSC, in its discretion, determines to be feasible and consistent with the objectives of DSC's Delta Plan and the purposes of the Delta Reform Act.

As completed by the Delta Protection Commission, ESP provides background information and data about the economics and demographics of the Delta, along with information about existing policies and the state of Delta levees. The report also analyzes of key industry sectors in the Delta, including industry trends and an assessment of the effects of various policy proposals. The final section of the plan provides a summary of integrative issues, identifying key issues and strategies for the Legacy Communities. Finally, the plan identifies a number of recommendations for supporting economic sustainability in the Delta. These are organized into 8 categories: Levee and Public Safety, General Recommendations for Economic Sustainability, Recommendations for Economic Sustainability of Agriculture, Recommendations for Economic Sustainability of Recreation and Tourism, Recommendations for Infrastructure, Recommendations for Habitat and Ecosystem Improvements,
While the ESP prepared by the Delta Protection Commission and this chapter evaluate similar mechanisms for effects on socioeconomics within the Delta (and surrounding areas), the ESP sometimes used assumptions and data different than those applied for the analysis in this chapter. For example, the two respective efforts reviewed varying baseline conditions, study areas, and information about proposed water conveyance and habitat restoration activities to be undertaken.

### 16.2.2.4 Transitions for the Delta Economy (Public Policy Institute of California)

In January 2012 the Public Policy Institute of California (PPIC) completed a report that evaluated the potential economic effects of permanent island flooding, changes in water salinity, expansion of seasonal floodplain and tidal marsh habitat, and growth in recreation. This study examined the potential economic effects of changes in the Delta land and waterscape as a result of management activities and natural forces and suggested planning priorities to support transitions in the Delta economy. The report reviewed recent patterns and trends in Delta land use and employment, and drew on a range of data and modeling tools to assess the effects of the following types of physical changes on economic activity in the Delta: (i) the permanent flooding of roughly 75,000 acres of land on subsided Delta islands that may not offer sufficient economic justification for repair after flooding; (ii) increases in irrigation water salinity from the introduction of dual conveyance, sea level rise, and the flooding of islands that restrict salinity intrusion from the Delta’s western edge; and (iii) reductions in cropland from the expansion of seasonal floodplain and tidal marsh habitat.

While the report prepared by the PPIC and this chapter are based on similar impact mechanisms and a similar geographic scope for potential effects on socioeconomics within the Delta (and surrounding areas), Transitions for the Delta Economy and the analysis presented in this chapter vary in their treatment of future conditions in the Delta and the potential response to levee failure. There are important distinctions between the analyses conducted in the PPIC report and the analyses found in this chapter. The PPIC report projected out future Delta economic conditions by estimating losses resulting from sea level rise, inundation of central Delta islands, and consideration for future economic benefits resulting from increased recreation opportunities. This EIR/EIS, in contrast, has focused on quantifying economic benefits and costs resulting from constructing and operating water conveyance facilities and analyzed the economic consequences of implementing a long-term habitat restoration and preservation program.

### 16.2.2.5 DWR Economic Analysis Guidebook

DWR’s Economic Analysis Guidebook (California Department of Water Resources 2008a) provides guidance regarding the economic assessments that should be conducted from project formulation through implementation. These include cost effectiveness, benefit-cost, socioeconomic impacts, risk and uncertainty, and financial analyses. This chapter of the EIR/EIS reports the estimated socioeconomic impacts that would occur under each of the project alternatives. The socioeconomic impacts are measured as changes in employment and income, property tax revenues, and community character attributable to each project alternative. The socioeconomic impact analysis follows the DWR guidelines by quantifying the direct, indirect, and induced employment and income effects of constructing and operating CM1. These impacts were quantified through the use of IMPLAN. The socioeconomic impacts of implementing Conservation Measures 2–22 were also
estimated, but not quantified because the information required as input to the IMPLAN model was not available. The socioeconomic assessment also extended beyond the study area and included CVP and SWP export areas.

The other economic analyses outlined in the DWR guidebook were not conducted as part of the NEPA/CEQA compliance documentation. However, the BDCP also includes an assessment of project implementation costs and potential funding mechanisms.

16.2.2.6 Proposed Final Delta Plan

In November 2009, the California Legislature enacted SB 1 X7, also known as the Sacramento–San Joaquin Delta Reform Act. The Delta bill created a new Delta Stewardship Council (DSC) and gave this body broad oversight of Delta planning and resource management. The DSC is tasked with developing, adopting, and commencing implementation of a long-term plan (the “Delta Plan”) which will be a legally enforceable, comprehensive management plan which emphasizes the coequal goals of “providing a more reliable water supply for California and protecting, restoring, and enhancing the Delta ecosystem” (Water Code Section 85300(a)) as foundation for state decisions as to Delta management.

The Delta Plan generally covers five topic areas and goals: increased water supply reliability, restoration of the Delta ecosystem, improved water quality, reduced risks of flooding in the Delta, and protection and enhancement of the Delta. The Delta Stewardship Council does not propose constructing, owning, or operating any facilities related to these five topic areas. Rather, the Delta Plan sets forth regulatory policies and recommendations that seek to influence the actions, activities, and projects of cities and counties and state, federal, regional, and local agencies toward meeting the goals in the five topic areas.

The DSC is in the process of approving the Delta Plan. The DSC adopted the Proposed Final Delta Plan, as well as the Final Delta Plan Program EIR and the Final Rulemaking Package, at its May 16, 2013 meeting. Once the State Office of Administrative Law and California Secretary of State approve the plan, the proposed policies in the Delta Plan will become enforceable regulations. The Proposed Final Delta Plan consists of 14 policies and 73 regulations (Delta Stewardship Council 2013). Policies included in the Delta Plan are summarized in Chapter 13, Land Use, Section 13.2.2.2. While none of these policies are directly focused on socioeconomic effects, many are indirectly related in that they would protect infrastructure and water supply critical to economic activities. Additionally, Chapter 5, Protect and Enhance the Unique Cultural, Recreational, Natural Resources, and Agricultural Values of the California Delta as an Evolving Place, introduces 19 recommendations focused on protecting the Delta’s communities and supporting the agricultural, recreation, and tourism economy in the Delta.

16.2.3 Regional and Local Plans, Policies, and Regulations

16.2.3.1 Contra Costa County General Plan

The following are excerpts from the Contra Costa County General Plan (County of Contra Costa 2009).
1. **Housing Element**

   1. **Goal 1:** Maintain and improve the quality of the existing housing stock and residential neighborhoods in Contra Costa County.

   2. **Goal 2:** Preserve the existing affordable housing stock in Contra Costa County.

2. **Land Use Element**

   1. **Goal 3-D:** To provide for a range and distribution of land uses that serve all social and economic segments of the County and its subregions.

   2. **Goal 3-G:** To discourage development on vacant rural lands outside planned urban areas which is not related to agriculture, mineral extraction, wind energy, or other appropriate rural uses.

   3. **Goal 3-K:** To develop a balance between job availability and housing availability with consideration to wage levels, commute distance, and housing affordability.

3. **16.2.3.2 Sacramento County General Plan**

   The *Sacramento County General Plan* update was adopted on November 9, 2011. The plan seeks to provide a sustainable growth management program for the unincorporated territory through 2030.

   The portion of Sacramento County potentially affected by the action alternatives is largely agricultural. The small, unincorporated communities of Courtland, Hood, Locke and Walnut Grove are located in the vicinity of some action alternatives.

   An economic development element was added as part of the 2011 update. This element introduced goals, objectives, policies, and implementation measures under the following strategic objectives.

   - Create a balanced land use policy providing for adequate commercial, office, industrial, and residential land

   - Identify new growth areas

   - Promote and support commercial corridor redevelopment

   - Attract key regional sales tax generators

   - Promote agriculture and agritourism

   - Continue redevelopment of Mather Airfield and McClellan Park

   - Support County airport systems

   - Develop regional and local partnerships and programs

   - Intensify business retention, attraction, development and business recruitment

   - Develop international trade

   - Increase sports, tourism and the arts in the region

   - Attract institutions of higher education

   The following are excerpts from the *Sacramento County General Plan* (County of Sacramento 2009b).
Plan Administration Element

1. Promote a relationship between job and housing availability with consideration given to age levels, housing affordability, and commute distance.

2. Limited development in rural areas which does not compromise valuable open space and prime agricultural lands, and does not contaminate or overdraft groundwater aquifers. Promote a diversity of residential living options while ensuring community compatibility and quality residential development.

3. Assistance in the development of adequate housing to meet the needs of low-income and moderate-income households.

4. Promotion of housing opportunities for all persons regardless of race, religion, sex, marital status, and economic status. This includes promotion of housing opportunities for members of special needs groups, including female heads-of-household, senior citizens, persons with disabilities, farm workers, homeless people, and large families.

5. Preservation of assisted housing development for lower income households.

16.2.3.3 San Joaquin County General Plan

The following are excerpts from the San Joaquin County General Plan (County of San Joaquin 2009b).

Economic Development Goal

1. Provide a well-balanced, diversified economy with employment opportunities for all economic segments of the County.

2. Policy: Conservation of Affordable Rental Housing.

3. (v) Conservation of Subsidized Rental Housing.

4. Within the unincorporated County area, there are two subsidized rental housing projects owned and operated by the Housing Authority that provide affordable housing for 96 migrant farm worker households and 31 families. While neither of these projects is at-risk of converting to market rate housing, the County will provide assistance to the Housing Authority in obtaining state or federal funding, if needed, to ensure that these two projects are maintained and continued to provide affordable rental housing.

5. (w) Preservation of Mobile Home Parks.

6. The County will seek to preserve mobile home parks as a means of conserving the affordable housing stock. The County will undertake the following actions:

   a. Identify mobile home parks that are not located in residential zones and determine whether their long-term preservation could be facilitated by a rezoning to residential area. The County will contract the owner(s) of such park to obtain their consent for rezoning.

   b. Conduct a survey of mobile home parks to determine infrastructure improvement and housing rehabilitation needs. Based on the results of the survey, create a priority list of parks and improvements that can be assisted using state and federal funds.

   c. Provide assistance, in collaboration with an experienced nonprofit organization, to mobile home park residents who desire to acquire and manage their parks. Assistance will include coordination of meetings between interested residents and park owners to identify the most
appropriate parks for conversion to resident ownership, application assistance for state and/or federal funds, and identification of a nonprofit organization with experience in assisting the conversion of mobile home parks to resident ownership and management. If necessary to pursue funding, the County’s Grant Management Unit will apply directly to the appropriate state or federal agency.

1. (x) Conservation of Non-Subsidized Low-Cost Rental Housing.

2. Through its housing rehabilitation program (See program 'b'), San Joaquin County will target privately owned rental housing that is feasible to rehabilitate. The County will maintain the affordability of such rental housing by offering financial assistance to property owners in exchange for long-term affordability and occupancy restrictions to lower income households.

16.2.3.4 Solano County General Plan

The following are excerpts from the Solano County General Plan (County of Solano 2009b).

- **GOAL.** It is the county’s goal to promote and ensure adequate housing in a satisfying environment for all residents of Solano County.

**Housing Conservation and Rehabilitation**

- An important aspect of ensuring adequate housing in a satisfying environment in Solano County is the conservation and rehabilitation of the existing housing supply. Conserving and improving the County’s housing supply not only requires the rehabilitation of substandard structures, but also the continued maintenance and upkeep of existing structures in fair to sound condition.

**Economic Development Goal 3**

- Develop and maintain a favorable business environment in Solano County through recruitment, expansion, and retention of businesses to promote a closer match between local jobs and labor force skills.

16.2.3.5 Yolo County General Plan

The following are excerpts from the Yolo County General Plan (County of Yolo 2009b).

1. **Policy CC-2.4.** Emphasize the unincorporated communities as retail, service, and employment centers for local residents, as well as residents of surrounding rural (agricultural) areas. Where appropriate, include economic development in the unincorporated communities that serves intra-county and regional tourism.

2. **Policy CC-2.7.** Provide for higher density housing and mixed-use development in the downtown areas of the unincorporated communities to support commercial uses, create more pedestrian travel, extend activity into the evening, increase the variety of housing opportunities to include affordable and special needs housing, enhance safety, reduce traffic and support regular, frequent fixed-route transit service.

Yolo County Housing Element

The following are excerpts from the Yolo County Housing Element (County of Yolo 2009b).
1. The purpose of the Yolo County Housing Plan (Implementation Program) is to identify specific actions the County intends to take to implement the goals and policies of the Housing Element. The Housing Plan is designed to accomplish the following:

   a. Identify and provide adequate sites to achieve a variety and diversity of housing
   b. Facilitate the development of affordable housing
   c. Address and if necessary remove government constraints
   d. Conserve and improve existing affordable housing stock
   e. Promote equal housing opportunity

Additional goals and policies of the Housing Element include:

1. Strengthen Neighborhoods. Support safe, well-maintained, and well-designed housing as a way of strengthening existing and new neighborhoods.
2. Strengthen neighborhoods through the maintenance and rehabilitation of existing housing stock.
3. Promote and encourage community-wide infrastructure (e.g., curbs, gutters, sidewalks, street lighting, etc.) and complete streets.

16.3 Environmental Consequences

This section describes the potential effects of the alternatives on socioeconomic conditions within the Delta region. Effects are identified and, where appropriate, mitigation measures are identified. This section describes potential direct and indirect effects on socioeconomics that would result with implementation of each alternative. The assessment within the Delta included potential effects on community character and cohesion, population, housing, employment, and income. In addition, particular focus was placed on fiscal effects on local governments and on economic effects of potential changes in agricultural production and recreational activity. BDCP alternatives are not anticipated to cause changes in water deliveries in areas upstream of the Delta. Therefore, discussion focuses on effects occurring in the Delta region.

This analysis separates effects relating to socioeconomic conditions in the Delta into two categories: one related to the construction and operation of water conveyance facilities (CM1), which are project-level features, and one related to implementation of other conservation measures (CM2–CM22), which are program-level features. Under each alternative, the analysis further separates effects from the water conveyance facilities into those stemming from construction of the structural features and those resulting from related operational and maintenance activities following construction. Nine of the proposed conservation measures related to supporting covered species and reducing effects from environmental stressors (listed below and described in detail in Chapter 3, Description of Alternatives, Section 3.6.3), which would be implemented under all action alternatives, are not anticipated to result in any meaningful effects on socioeconomic conditions in the Delta region because the actions implemented under these conservation measures are not, for the most part, land-based or land-focused activities, nor would they be expected to result in any direct or indirect effects on population, housing, or employment in the study area. Accordingly, these measures will not be addressed further in this analysis:

- Methylmercury Management (CM12)
Several analytical methods and models were used to assess environmental consequences. Section 16.3.1, *Methods for Analysis*, is organized according to the region and topic addressed by these methods and models. Each method and model is described, and the region and economic effect to which it was applied are identified.

### 16.3.1 Methods for Analysis

Part of the socioeconomic analysis is based upon results of hydrologic and water quality analytical model simulations of the Existing Conditions, the No Action Alternative, and action alternatives. For the BDCP EIR/EIS, operations of Alternative 1A through Alternative 9 were analyzed for future conditions at the year 2060. Under 2060 conditions, it is anticipated that sea level rise will occur and hydrology in the Delta watershed will change because climate change modeling indicates that there will be less snow and more rain as compared to Existing Conditions, as described in Chapter 5, *Water Supply*, Section 5.3. This analysis compares conditions under implementation of the alternatives with Existing Conditions (without sea level rise and climate change) and No Action Alternative (with sea level rise and climate change).

The *Cumulative Analysis* (Section 16.3.4) in this chapter presents the results of the comparison of socioeconomic conditions with operations of Alternative 1A through Alternative 9 at 2060 with conditions under No Action Alternative at 2060.

For the purposes of socioeconomic analysis, effects of BDCP action alternatives are divided into discussion of effects that could occur during and/or as a result of construction activities associated with one or more of the BDCP conservation measures ("temporary effects") and effects that could occur during and/or as a result of operation and maintenance activities associated with one or more of the BDCP conservation measures ("permanent effects"). Note that construction activities are anticipated to occur over an eight-year period, and that the construction period assumed for this chapter may differ slightly from the periods assumed for other chapters. This is due to the refinement of the estimated length of the construction period for purposes of providing cost data used to model socioeconomic effects.

### 16.3.1.1 Delta Community Effects

**Analytical Approach**

Analysis of the Delta community specifically addressed population, housing, and social and community effects. Potential effects on housing and population include displacement of existing
residences and changes in employment. Estimated construction and operation expenditures were used as an input to the Impact Analysis for Planning (IMPLAN) model, which applies multipliers to generate estimates of employment and income change for the five-county Delta region. The five-county Delta region IMPLAN model is described in Section 16.3.1.2, Delta Regional Employment and Income.

Social and community impacts were qualitatively evaluated with consideration of effects on established communities whose character could be most directly influenced by BDCP activities based on total population, economic composition, proximity to proposed BDCP features, and the nature of BDCP activities. This assessment focused on communities in the statutory Delta, where the direct effects of the BDCP would occur and where social and community effects would be greatest. Social and community effects elsewhere in the larger five-county Delta region are anticipated to be minor because they would be spread over a large, heavily populated area and among many communities.

**Population and Housing Impacts**

Estimates of housing demand, for the construction phase and the operation phase of each alternative, were calculated based on changes in employment. The employment impact data were drawn from the analysis of Delta regional employment and income (see Section 16.3.1.2 for a description of that methodology). A BDCP alternative is expected to draw from the entire workforce in the five-county region, not merely those workers who are available in the immediate area of construction or operation activity. It is expected that some portion of the construction workforce would consist of workers in the five-county Delta region who would not demand new housing. However, the conveyance construction would require specialty occupations, such as tunnel boring machine operators, that require skills not likely available in the local workforce. Thus, out-of-region contractors may bring their crews to the area. These workers may arrive from outside the five-county Delta region and demand additional housing. Because of the likelihood that specialized occupations and out-of-region contractors would enter the region, this analysis assumed that some of the new construction and operation workers would demand housing in the five-county region.

The proportion of construction crews coming from within the Delta region was determined through consultations with the engineering staff that developed project cost estimates.

Changes in housing demand were assessed for the short-term construction phase and for the longer-term operation phase. Available permanent housing was determined by estimating the number of vacant housing units using the total housing units and vacancy rates for each of the five counties. Available temporary housing for the construction crews, e.g., recreational vehicle [RV] parks, was evaluated through internet searches of RV parks in each of the five counties.

Total estimated changes in population as a result of implementing a BDCP alternative were calculated by multiplying the average number of persons per household, according to the DOF (California Department of Finance 2008), and the change in number of workers anticipated under each phase (by alternative) using the results of the five-county Delta region IMPLAN analysis (see Section 16.3.1.2). Population changes were assessed for the short-term construction phase and for the longer-term operation phase. The changes in population resulting from construction and operation of a BDCP alternative were then compared to the projected population. In instances where population changes are anticipated to deviate from the historical annual average for the five-county Delta region (2000 to 2008), an impact is identified and discussed.
Social and Community Impacts

The assessment of social and community impacts was based on comparing social and community-level impacts of each alternative to the Existing Conditions or No Action Alternative. The methodology specifically identified the physical and socioeconomic changes to the environment, including systematic changes to the entire region, such as regional economic changes that may affect the day-to-day ways that people live, work, or play.

As used in this analysis, community character describes the physical and social structure of a community that makes up its unique or distinctive attributes. Examples of Delta community characteristics include location, small town feeling or rural setting, proximity to recreational opportunities, and cultural and natural heritage, all of which contribute to a sense of place. Community cohesion describes a shared sense of belonging and “common ground” among members of a community. Cohesion is supported by mobility and the ability to build and maintain relationships within a community, and is often enhanced by the activities of community organizations or community gathering places (such as schools, libraries, places of worship, and recreational facilities).

The physical and economic effects of the alternatives, as addressed in other sections of this document, were reviewed to determine what extent and degree of change to the environment could affect individual communities and populations, and how they would potentially affect community character. Construction activities related to water conveyance facilities would occur over a multiyear period and could create sources of noise, pollution, traffic, and other conditions that could be considered to affect the characteristics of Delta communities. These activities, along with the long-term placement of the conveyance facilities, could also alter the character of these areas by reducing the extent of undeveloped land in proximity to communities and by changing the viability or desirability of leading economic and social pursuits, including agricultural activities and water-based recreation. A list of businesses and institutions within 0.5 miles of the water conveyance facility construction footprint for each conveyance alignment was also reviewed to identify community gathering places that could be directly or indirectly affected by construction activities.

Implementation of habitat restoration could have some similar effects during the construction period by introducing conditions that would alter and potentially detract from the rural characteristics of Delta communities. These BDCP activities could also introduce sources of noise, air pollution, and traffic during earthwork and site preparation of habitat areas. In the long term, these activities could also affect communities by converting agricultural land to other uses, which could change economic and social conditions within communities. These areas could also change the extent or nature of recreation in the Delta, which could also alter the character of communities.

Aside from direct conflicts with existing structures requiring relocation (which are described in Chapter 13, Land Use, Impact LU-2), changes in regional economics, including employment and income (discussed under Impacts ECON-1, ECON-7, and ECON-13), and changes to population and housing in the study area (discussed under Impacts ECON-2, ECON-8, and ECON-14), BDCP activities may also result in indirect effects on the demographic composition of communities. For example, lower rates of unemployment could contribute to spillover benefits like reduced numbers of vacant buildings, lower poverty and crime rates, and lessened need for social services. The BDCP’s effects on community character are anticipated to be substantially influenced by changes in the size and composition of a population as well as changes in employment and, more generally, in the economic welfare of a particular community. Thus, the demographic effects of regional economic changes...
inform anticipated changes to a community’s character and stability. Considerable decreases or
increases in population size or substantial demographic changes resulting from the construction of
water conveyance facilities or from implementation of other conservation measures would be
anticipated to alter community character and could create effects on the quality of the human
environment, particularly in those communities closest to BDCP activities.

Data Sources

Existing Conditions estimates and No Action Alternative projections for population and housing
were obtained from the DOF, California Department of Housing and Community Development, and
the U.S. Census Bureau, and are described in Section 16.1, Environmental Setting/Affected
Environment. The availability of housing was assessed using vacancy rate and number of dwellings
by type from DOF (California Department of Finance 2012b). Additionally, DWR’s geodatabase of
businesses and institutions in the Delta was used to identify potential community gathering places
in the vicinity of water conveyance construction activities.

Links to Other Impact Analysis Sections

Impacts on population and housing relied directly on the output from the economic and
employment analyses and are addressed in Section 16.3.1.2, Delta Regional Employment and Income.
Potential social impacts and impacts on community character may result from changes in
employment, income, and changes in recreational uses and opportunities. These impacts are
discussed in the relevant sections, and their conclusions were used to assess impacts on community
character.

Analysis Metrics

The analyses of effects on Delta communities’ population, housing, and character are presented
quantitatively or qualitatively.

- Quantitative estimates of changes in population.
- Quantitative estimates of changes in housing supply and quantity demanded.
- Qualitative description of potential changes in community character.

16.3.1.2 Delta Regional Employment and Income

Analytical Approach

Regional economic effects include changes in characteristics like regional employment and income.
[Note that for the purposes of the environmental consequences section of this chapter, “income”
refers to “labor income”. As defined by the IMPLAN model, labor income consists of “all forms of
employment income, including Employee Compensation (wages and benefits) and Proprietor
Income”.] The magnitudes of the economic effects within the five-county Delta region depend on the
initial changes in economic activity within the region (such as construction expenditure or loss of
production from existing economic activities), the interactions within the regional economy, and the
“leakage” of economic activity from this regional economy to the larger, surrounding economy.
Economic linkages create multiplier effects in a regional economy as money is circulated by trade.
These linkages are often modeled using a large mathematical model called an input-output model.
IMPLAN is a computer database and modeling system used to create input-output models for any combination of United States counties. IMPLAN is the most widely used input-output model system in the United States. It provides users with the ability to define industries, economic relationships, and projects to be analyzed. It can be customized for any county, region, or state, and used to assess the “ripple effects” or “multiplier effects” caused by increasing or decreasing spending in various parts of the economy. The model describes the flows from producers to intermediate and final consumers using a series of economic multipliers. The model of county-level economic interactions is used to project, using the input-output multipliers, total regional economic activity based on a change in expenditures. The IMPLAN output used in the assessment includes the direct, indirect, and induced changes in employment and income.

IMPLAN includes (1) estimates of county-level final demands and final payments developed from government data; (2) a national average matrix of technical coefficients; (3) mathematical tools that help the user formulate a regional model; and (4) tools that allow the user to change data, conduct analyses, and generate reports.

Economic effects on the five-county Delta region economy can result from construction and operation of facilities, changes in recreational uses, changes in agricultural production, changes in operations and maintenance of existing natural gas wells, changes in water quality to municipal and industrial users, and changes in other affected businesses. The direct effects of quantified changes (e.g., construction and operation spending or change in agricultural production or recreation expenditures) are input to IMPLAN regional economic models. Based on input from the DHCCP cost estimators, local and non-local components of labor and non-labor (i.e., equipment and other materials) expenditures associated with construction and operation of the BDCP facilities were identified. These expenditures were used as input to IMPLAN to determine the regional employment and income changes associated with the construction and operation of BDCP facilities under each of the alternatives. The resulting output (employment and income) for each alternative model run is the change from the base model run (Existing Conditions and the No Action Alternative are the same “base” IMPLAN model).

A separate regional IMPLAN model was used to estimate the employment and income changes associated with changes in agricultural production in the five-county Delta region. Changes in employment and income associated with changes in recreation expenditures were not estimated using a regional IMPLAN model because direct changes in recreational expenditures have not been quantified. Similarly, changes in employment and income associated with potential abandonment of existing natural gas wells in the study area were not estimated using a regional IMPLAN model because employment effects are anticipated to be very small. The direct effects of the implementation of the other conservation measures (CM2–CM22) were not quantified, so their effects on the regional economy are described in Section 16.3.3, but were not analyzed using IMPLAN.

An IMPLAN model of the five-county Delta region identified in Section 16.1, Environmental Setting/Affected Environment, was used to estimate total changes in employment and income in the region. The model follows county lines and incorporates, to the extent allowed by available data, the employment and income characteristics of the economic sectors in the region modeled. Construction-related changes were modeled based on the expected year of expenditure. All other changes were assumed to be average annual changes. Estimates of direct employment during construction and operation of each alternative were derived from the total payroll estimate. With the exception of employment, all direct effects were expressed in dollar terms for all affected
sectors. For example, agricultural effects were incorporated into the input-output models in dollar terms as changes in gross revenues or costs.

Figure 16-1 provides an overview of the steps that were followed to quantify the potential socioeconomic impacts as a result of constructing and operating the water conveyance facilities (CM1). Both the beneficial and adverse socioeconomic impacts resulting from implementing the restoration activities were qualitatively discussed. Quantification of socioeconomic impacts was measured as changes in employment and income. These changes in employment and income were estimated for three primary activities; temporary and permanent loss of agricultural production, construction expenditures, and operation and maintenance expenditures.

**Assumptions and Limitations**

An IMPLAN model is formulated as a single-region model. The model does not explicitly recognize interregional dependencies among sectors, except for the model’s data related to imports, exports, and regional purchases. For this reason, single-county models would require very careful interpretation and qualification; more of the secondary effects of changes are apt to occur in other counties and thus be excluded from single-county models. The model used is a grouping of the five Delta counties, which includes a broader and more self-sufficient range of economic activities than each individual county. This region is sufficiently large to capture most of the important secondary effects of direct changes in economic activity. However, a portion of direct BDCP expenditures is estimated to occur outside of the Delta region, and a portion of the secondary effects of within-Delta expenditures would occur outside the Delta. These effects are not included in results for the five-county Delta region.

IMPLAN does not allow for substitution among production inputs, and no economies of scale are possible. It also does not include price effects that might be important to a region. The model also assumes that workers who become unemployed or employed due to a change in final demand have no alternative employment.

Finally, the IMPLAN database is very large, incorporating up to 440 sectors. IMPLAN is periodically updated as more and better data become available, but it is not possible to check every number for accuracy. However, some of the coefficients for key affected sectors, such as agriculture, were validated or revised to provide a better representation of secondary effects within the analysis.

**Data Sources**

IMPLAN uses a system of national accounts for the United States based on data collected by the U.S. Department of Commerce’s Bureau of Economic Analysis, the U.S. Department of Labor’s Bureau of Labor Statistics, and other federal and state government agencies. Data are collected for 440 distinct sectors of the national economy, corresponding to the North American Industry Classification System. Industry sectors are classified on the basis of the primary commodity or service produced. Corresponding data sets are produced for each county in the United States, allowing analysis of individual counties, clusters of contiguous counties, individual states, or groups of states.

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4 Imports are goods and services brought into the region being analyzed by the IMPLAN model from other parts of the state, nation, or world. Exports are goods and services produced in the region being analyzed by the IMPLAN model which are shipped outside this region to other parts of the state, nation, or the world.
The model estimated regional economic changes arising from the increased expenditures during construction and operation of the water conveyance facilities. The changes in agricultural output resulting from the changes in acreages and production were used as input into the five-county Delta region IMPLAN model to estimate the secondary regional employment and income changes.

Potential effects on employment and income from implementation of the other conservation measures (CM2–CM22) were not evaluated using IMPLAN because the specific locations, sizes, and costs are not known at this time.

**Links to Other Analysis Sections**

The agricultural economics analysis provides the data needed to evaluate the regional economic effects associated with changes in agricultural production in the Delta. These data include changes in value of production and costs associated with changes in crop production. These changes were translated into changes in final demands as input into the five-county Delta region IMPLAN model to estimate indirect and induced changes.

Regional economic effects associated with Conservation Measures 2–22 are described qualitatively, focusing on activities during implementation of these measures and on economic activities potentially displaced within areas affected by these measures.

**Analysis Metrics**

The analysis of regional economic effects is presented quantitatively or qualitatively.

- Quantitative estimates of changes in annual regional employment.
- Quantitative estimates of changes in annual regional labor income.
- Qualitative description of changes in employment and income that may result from implementation of Conservation Measures 2–22.

**16.3.1.3 Fiscal Effects on Local Delta Governments**

Fiscal effects on local Delta governments would occur from changes to property tax, sales tax, or assessment revenue resulting from implementation of a BDCP alternative. The analysis estimated the loss of property tax revenue resulting from potential acquisition of existing privately-held land as a result of a BDCP alternative. The analysis also discusses potential changes in sales tax revenue as a direct result of the estimated construction and operation expenditures, and from changes in agricultural sales and recreational expenditures.

A BDCP alternative may result in changes to existing land ownership and use that, in turn, would affect the property taxes on affected parcels. As part of the economic assessment in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*, estimates of foregone property tax revenues, in undiscounted 2012 dollars, were developed for the effects of land acquisitions for constructing and operating water conveyance facilities (Conservation Measure 1) and for implementing habitat restoration measures (Conservation Measures 2-22). (The conveyance configuration analyzed in BDCP Chapter 8 is the same as the Alternative 4 configuration.) The estimates of foregone property tax revenues were developed using IMPLAN, a regional economic modeling software tool. IMPLAN’s labor income includes “all forms of employment income, including Employee Compensation (wages and benefits) and Proprietor Income”.

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tax revenues were developed based on the following data and assumptions, which are described 
more fully in BDCP Chapter 8, Property Tax and Assessment Revenue Replacement, Section 8.2.3.23:

- Acquisition of fee-title interest in private land was assumed to result in loss of local property tax 
  and assessment revenues. Surface and subsurface easement acquisition is not expected to have a 
  significant impact of local property tax and assessment revenue and therefore was excluded 
  from the analysis.

- An assessment rate of 1.5% per dollar of assessed value was used to estimate property tax and 
  assessment revenue impacts.

- Because assessed property value is generally lower than market value, the assessment rate 
  could not be directly applied to estimated fee-title acquisition costs. The rate was therefore re-
  expressed in terms of fee-title value by calculating the ratio of assessed value to estimated 
  market value for the parcels and then multiplying the 1.5% average assessment rate by this 
  ratio. This resulted in an average assessment ratio of 1.0% per dollar of market value. The 
  assessment rate as a percent of market value was then applied to the fee-title land acquisition 
  cost estimates for each conservation measure.

For additional assumptions regarding the market value of land acquired for conveyance facilities 
and habitat restoration, please see BDCP Chapter 8, Land Value Assumptions, Section 8.2.2.4.2.6

To account for anticipated variation in forgone property tax revenue for alternatives whose 
conveyance footprint acreages or habitat target acreages differ from those analyzed for the BDCP, 
scaling factors were developed based on the difference in the total land area affected by different 
alternatives, as a percentage of that affected under Alternative 4. The foregone revenue estimates 
for Alternative 4 provide the basis for the development of estimates for alternatives with varying 
levels of land acquisition. Potential effects of tax revenue changes on local governments are 
described in Section 16.4, Environmental Consequences.

16.3.1.4 Delta Agricultural Economics

The analysis of the economic effect of changes in Delta agricultural production used results from 
Chapter 14, Agricultural Resources and Appendix 14A, Individual Crop Effects as a Result of BDCP 
Water Conveyance Facility Construction, which include changes in acreage resulting from facilities 
construction and operation and potential, but unquantified changes in crop production from water 
conveyance operations, and changes related to implementation of Conservation Measures 2–22.

Quantitative estimates were made of the change in the value of agricultural production. Estimates 
were based on the acreage changes and, if appropriate, yield changes, estimated in Appendix 14A, 
Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction, and the prices and 
per-acre crop revenue information summarized in Section 16.1. Quantitative estimates are 
presented for the Delta region as a whole, but areas within the Delta that may be disproportionately 
affected are described in Section 16.3.3, Effects and Mitigation Approaches.

The location, size, and operation of CM2–CM22 are conceptual, so potential effects on the value of 
agricultural production are discussed qualitatively. Other potential effects on agricultural

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6 As described in Chapter 1, Introduction, Section 1.1, the full Draft EIR/EIS should be understood to include not 
only the EIR/EIS itself and its appendices but also the proposed BDCP documentation including all appendices.
production and costs that may be caused by the disruption of transportation and other infrastructure are described qualitatively.

In summary, the following quantitative and qualitative comparisons are provided.

- Quantitative estimates of changes in value of agricultural production.
- Qualitative estimates of changes in production costs.
- Qualitative estimates of changes in value of agricultural facilities and investment.

The potential effects of BDCP facilities and operations on farm employment and related economic sectors were also evaluated and are described as part of the regional economic analysis in Section 16.3.3.

16.3.1.5 Delta Recreational Economics

The analysis of the economic effect of changes in Delta recreation used results from Chapter 15, Recreation, Chapters 15.3.3.2 through 15.3.3.16, which included potential changes in recreational opportunities and quality resulting from facilities construction and operation, as well as potential changes resulting from the implementation of CM2–CM22.

These changes, along with their anticipated economic effects, are discussed qualitatively in Section 16.3.3 and are based on the discussion and analysis included in Chapter 15, Recreation, Sections 15.3.3.2 through 15.3.3.16. While these discussions estimate recreational effects on the study area as a whole, it is possible that recreational opportunities and quality in specific areas within the Delta would be disproportionately affected by BDCP activities. It is also possible that these activities would create beneficial effects in specific places based on the relocation of existing activities accomplished as part of an environmental commitment (see Appendix 3B, Environmental Commitments) or through the creation of new or higher-quality recreational opportunities related to mitigation measures, as described in Chapter 15, Recreation, Sections 15.3.3.2 through 15.3.3.16. The potential for these economic effects is discussed, where appropriate.

16.3.1.6 Commercial Fishing Effects

Commercial salmon fishing effects are not addressed for individual alternatives in this chapter because, while speculative, these effects are anticipated to be positive overall and would be spread among coastal regions where commercial landings occur. The economic impacts of potential changes in commercial salmon fisheries related to implementation of the BDCP have been qualitatively assessed in Draft Bay Delta Conservation Plan Statewide Economic Impact Analysis, Section 3.5, Commercial Fisheries. As discussed in this report, fall-run Chinook salmon are the only major commercial fish species in the Delta.

As discussed in the Statewide Economic Impact Analysis, the overall impacts of the implementation of the BDCP are expected to be positive for both the populations and commercial landings of fall-run chinook salmon. Due to the exogenous oceanic conditions and other factors inside and outside the Delta, however, there is a high level of uncertainty involved in forecasting salmon populations over time. Thus, the statewide economic impact analysis was not able to quantify and monetize the impact of the BDCP related to commercial fisheries. The overall effects, however, are anticipated to be positive.
16.3.2 Determination of Effects

For NEPA purposes, effects on socioeconomic conditions were considered changed if implementation of an alternative would result in one of the following conditions.

- Changes related to regional economics. For the purposes of this analysis, a reduction in employment or labor income associated with BDCP activities would be considered an adverse socioeconomic effect, while an increase in employment or labor income associated with BDCP activities would be considered a beneficial socioeconomic effect.

- Changes related to population and housing. For the purposes of this analysis, a concentrated, substantial increase in population or new housing associated with BDCP activities would constitute an adverse socioeconomic effect.

- Changes related to community character. For the purposes of this analysis, BDCP activities that would substantially disrupt social and economic patterns within established communities would be deemed to represent an adverse socioeconomic effect. BDCP activities that would support social and economic patterns within established communities would be considered a beneficial socioeconomic effect.

- Changes related to recreational economics. For the purposes of this analysis, an adverse socioeconomic effect would occur when construction or operations and maintenance activities result in loss of public access to or public use of well-established recreation facilities or activities lasting for more than 2 years.

- Changes related to agricultural economics. For the purposes of this analysis, an adverse socioeconomic effect would be characterized by a reduction in crop acres or a reduction in agricultural production value as a result of BDCP activities.

- Changes related to local government fiscal conditions. For the purposes of this analysis, an adverse socioeconomic effect would result if a BDCP activity led to a reduction in local government revenue. A beneficial socioeconomic effect would result if a BDCP activity led to an increase in local government revenue.

Where applicable, effects are described as beneficial or adverse and are identified as substantial or not substantial relative to the geographical context of the Delta Region. Socioeconomic effects are described at a project level for construction and operation of the conveyance facilities (CM1). Effects that would result from implementation of other conservation measures are described at a programmatic level.

Economic effects are potentially significant if they lead to reasonably foreseeable physical or social impacts. As noted, under CEQA, economic effects are not significant impacts, but an EIR should consider their potential to lead to reasonably foreseeable physical changes in the environment. Several impact topics discussed in this chapter could lead to such physical or social effects, including those related to housing, population, and community character. Economic impacts may also be used to assess the significance of other environmental changes that caused them, such as changes in water supply or water quality. The significance of those associated environmental impacts is discussed in other chapters.
16.3.2.1 Compatibility with Plans and Policies

Constructing the proposed water conveyance facility (CM1) and implementing CM2–CM22 could potentially result in incompatibilities with plans and policies related to socioeconomics. Section 16.2, Regulatory Setting, provides an overview of federal, state, regional and agency-specific plans and policies related to socioeconomics. This section summarizes ways in which BDCP is compatible or incompatible with those plans and policies. Potential incompatibilities with local plans or policies, or with those not binding on the state or federal governments, do not necessarily translate into adverse environmental effects under NEPA or CEQA. Even where an incompatibility "on paper" exists, it does not by itself constitute an adverse physical effect on the environment, but rather may indicate the potential for a proposed activity to have a physical effect on the environment. The relationship between plans, policies, and regulations and impacts on the physical environment is discussed in Chapter 13, Land Use, Section 13.2.3.

Government Code Section 65302(c) requires a housing element in all city and county general plans. The detailed requirements of such elements are set forth in Government Code section 65580 et seq. The effect of these requirements is to assure that cities and counties recognize their responsibilities in contributing to the attainment of the state housing goal. The basic objective is to ensure that decent housing and a suitable living environment can be made available for every Californian. Related goals found in general plans within the Delta region include maintaining and improving the quality of existing housing stock, preserving the existing affordable housing stock, conserving and rehabilitating existing housing supply, facilitating the development of affordable housing, promoting equal housing opportunity, and strengthening neighborhoods. Implementing a BDCP action alternative could require increased demand for housing or require the removal of existing structures, including residential structures. Such effects are described under Impacts ECON-2, ECON-8, and ECON-14. As discussed under these sections, changes in population and housing are anticipated to be minor relative to the five-county Delta region and the effects would be anticipated to be dispersed throughout the region.

Delta region county general plans also include goals specific to economic development and general economic goals. These generally emphasize strategies to support the maintenance and development of local economic activities including identification of key resources, infrastructure, or sectors to pursue. The potential effects of implementation of BDCP alternatives on regional economics are described in Impacts ECON-1, ECON-7, and ECON-13. In particular, this discussion focuses on the direct and indirect effects on employment and labor income associated with BDCP activities.

General plans also include other goals or policies related to socioeconomic conditions in specific elements dedicated to economic development or are included in other elements, such as land use, recreation, or plan administration. Examples include policies protecting land uses that are supportive of economic activities, including agricultural lands or open space areas dedicated to recreational uses. Additionally, the Economic Sustainability Plan identifies a range of recommendations related to BDCP activities, as summarized in Section 16.2.2.3. These include recommendations that the economic impacts of habitat creation and development of facilities for export water supply be fully mitigated, that the loss of highly productive farmland be minimized to the greatest practical extent, that Delta water quality be protected for agricultural uses. In addition the impact discussions referenced above, socioeconomic effects related to land use changes associated with the BDCP are considered under Impacts ECON-5, ECON-6, ECON-11, ECON-12, ECON-17, and ECON-18. Additional physical effects related to these issues are described in Chapter 8, Water Quality, Chapter 14, Agricultural Resources, and Chapter 15, Recreation.
16.3.3 Effects and Mitigation Approaches

16.3.3.1 No Action Alternative

Under the No Action Alternative, socioeconomic conditions would continue largely as under Existing Conditions. This alternative includes continued SWP/CVP operations, maintenance, enforcement, and protection programs by federal, state, and local agencies, as well as projects that are permitted or under construction. A complete list and description of programs and plans considered under the No Action Alternative is provided in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions. Over the long-term, Delta communities and socioeconomic conditions in the Delta would be subject to risks associated with climate change, seismic activity, and other phenomena, as discussed in Appendix 3E, Potential Seismic and Climate Change Risks to SWP/CVP Water Supplies.

Regional Economics

Under the No Action Alternative, the regional economy of the Delta region is expected to be similar in structure to that described in Section 16.1, Environmental Setting/Affected Environment. Potential changes in expenditures related to recreation and municipal and industrial water uses as well as potential changes in the value of agricultural production could result in changes to regional employment and income in the Delta region under the No Action Alternative. The scale of the economy would change with population growth; however, the structure of the economy would not. Therefore, for the purposes of this analysis, no regional economic impact evaluation is undertaken as the economy is assumed to be similar to that characterized by the baseline five-county Delta region IMPLAN model.

Population and Housing

Under the No Action Alternative, it is anticipated that the population would follow the projections described in Section 16.1, Environmental Setting/Affected Environment. Trends in housing demand and supply would correspond to population trends. It is assumed that the growth in housing would match the growth in population, as described in Section 16.1, Environmental Setting/Affected Environment.

Community Character

Under the No Action Alternative, community character, including community cohesion and the functionality of community gathering places, within the five-county Delta region would be similar to that described under Section 16.1, Environmental Setting/Affected Environment. Projects and programs implemented under this alternative would not be anticipated to create adverse effects on the character of Delta communities.

CEQA Conclusion: The ongoing programs and plans under the No Action Alternative would not be anticipated to alter the character of Delta communities when compared with Existing Conditions and therefore would not be anticipated to result in a physical change to the environment.

Local Government Fiscal Conditions

In consideration of the programs and plans adopted included in the No Action Alternative, local government fiscal conditions in Delta region would be anticipated to be similar to those conditions.
Programs resulting in public acquisition of privately-held land, in addition to the population and economic changes described above, could affect property and sales tax revenue; however, the overall effects of this alternative are not anticipated to be adverse.

**CEQA Conclusion:** The ongoing programs and plans under the No Action Alternative, along with anticipated population growth, would be anticipated to result in local government fiscal conditions similar to those described under Existing Conditions and would therefore not be anticipated to result in a physical change to the environment.

### Recreational Economics

Recreational economics within the five-county Delta region would be anticipated to be similar to that described under Section 16.1, *Affected Environment/Environmental Setting*. Projects to enhance and manage recreational resources, along with population growth in the Region, would be expected to increase economic activity associated with recreation in the Delta. While outside factors including changes to fisheries could alter the quality of recreational resources, based on consideration of ongoing measures to support recreation, adverse effects would not be anticipated.

**CEQA Conclusion:** The ongoing programs and plans under the No Action Alternative, along with anticipated population growth, would result in economic contributions similar to or higher than those described under Existing Conditions and therefore would not be anticipated to result in a physical change to the environment.

### Agricultural Economics in the Delta Region

Conditions described below under the No Action Alternative are based on summary crop acreages and value of production information presented in the Section 16.1, *Environmental Setting/Affected Environment*. Irrigated crop acreage and value of agricultural production in the Delta region under the No Action Alternative are summarized in Table 16-18. On average, $650 million in crop value would be generated on about 480 thousand irrigated acres. Field and forage crops are the two largest categories in acreage, and account for over 60% of the total irrigated acreage. Over 65% of the annual value of crop production is accounted for by two other crop categories: vegetable, truck, and specialty, and orchards and vineyards. Production costs and investments are similar to those described in Section 16.1, *Environmental Setting/Affected Environment*. It is possible that some of the projects, programs, and plans considered part of the No Action Alternative would reduce the total acreage and value of agricultural production in the Delta region. For example, under the 2008 and 2009 NMFS and USFWS BiOps, up to 8,000 acres of agricultural land could be converted to tidal habitat. Similarly, agricultural land uses in the Yolo Bypass or Suisun Marsh could be periodically or permanently disrupted by other habitat restoration efforts.
Table 16-18. Crop Acreage and Value of Agricultural Production in the Delta Region under the No Action Alternative

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Total Crop Acreage (thousand acres)</th>
<th>Total Value of Production (million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grains</td>
<td>58.6</td>
<td>24.2</td>
</tr>
<tr>
<td>Field crops</td>
<td>191.1</td>
<td>113.8</td>
</tr>
<tr>
<td>Forage crops</td>
<td>112.7</td>
<td>73.1</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>77.2</td>
<td>268.4</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>44.0</td>
<td>170.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>483.7</strong></td>
<td><strong>650.0</strong></td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).

Salinity of irrigation water is described in Chapter 8, Water Quality, Section 8.1.3.7. The relationship between soil and irrigation water salinity and crop production and the response of growers to these changes is described in Chapter 14, Agricultural Resources, Section 14.1.1.6.

Because the agricultural economy of the Delta is expected to be similar in structure to that described in Section 16.1, Environmental Setting/Affected Environment, no quantitative impact evaluation was conducted.

**CEQA Conclusion:** In total, the ongoing programs and plans under the No Action Alternative would result in crop acreages and crop values similar to those under Existing Conditions and therefore would not be anticipated to result in a physical change in the environment.

**Effects in South-of-Delta Hydrologic Regions**

Under the No Action Alternative, several assumptions would create a deviation from Existing Conditions. First, an increase in M&I water rights demands is assumed north of the Delta, increasing overall system demands and reducing the availability of CVP water for export south of the Delta. Secondly, the No Action Alternative includes the effects of implementation of the Fall X2 standard, which requires additional water releases through the Delta and would therefore reduce the availability of water for export to SWP and CVP facilities. The No Action Alternative also includes effects of sea level rise and climate change, factors that would also reduce the amount of water available for SWP and CVP supplies. These factors result in a decrease in deliveries under the No Action Alternative, when compared to Existing Conditions. A detailed explanation of factors influencing deliveries under the No Action Alternative is provided in Chapter 5, Water Supply, Section 5.3.3.1.

As described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.3, overall deliveries would decrease, though SWP deliveries to the San Francisco Bay, South Coast, and Colorado River hydrologic regions would increase to meet projected increases in demand in those areas. Where there are reduced deliveries to agricultural contractors, it is reasonable to expect that agricultural production in affected areas would also decline. This decline could result from a shift to lower value crops or an increase in the acreage of land fallowed as a result of reduced deliveries or reduced reliability of deliveries. Under this scenario, it would also be anticipated that employment directly and indirectly associated with agriculture would decline in areas affected by reduced water deliveries. The location and magnitude of effects would depend largely on local factors and individual decisions. However, hydrologic regions where SWP and CVP deliveries represent a higher...
Socioeconomics

share of total water supply and where agriculture comprises a larger proportion of applied water use could be most susceptible to reductions in deliveries under the No Action Alternative. This includes the Tulare and San Joaquin River regions.

Increased SWP deliveries to M&I contractors in the San Francisco Bay, South Coast, and Colorado River hydrologic regions would be anticipated to meet demand associated with population growth in those regions. In other areas, M&I deliveries would generally decrease under the No Action Alternative. As discussed in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.5, long-term water supply reliability is an important component in enabling long-term population increases. However, other factors—including natural growth, employment opportunities, local policy, and quality of life—are more likely to determine population growth. Nonetheless, population growth could stimulate economic activity resulting from increased demand for goods and services. This increased demand could create broad economic benefits for regions whose growth is supported by increased deliveries under BDCP. As with estimating changes in agricultural production, the location and extent of population growth would depend largely on local factors. Where M&I deliveries under the No Action Alternative would be reduced compared to Existing Conditions to the extent that they would, in the long run, constrain population growth, their implementation could reinforce a socioeconomic status quo or limit potential economic and employment growth in hydrologic regions. Such a result could have the largest socioeconomic effect on regions with high dependence on SWP and CVP deliveries and where urban uses represent a high share of applied water use, including the South Lahontan region and the San Francisco Bay region (in consideration of a reduction in CVP deliveries). A detailed discussion of these potential effects is found in Appendix 5B, Responses to Reduced South of Delta Water Supplies.

Changes to SWP and CVP deliveries to the hydrologic regions under the No Action Alternative could affect community character. Where agricultural deliveries decline, resultant decreases in employment and production could destabilize economic and social patterns and institutions in communities where agriculture is a predominant economic activity. Decreases in M&I deliveries as a result of the No Action Alternative, were they to constrain long-term population growth, could reinforce a socioeconomic status quo or limit potential economic and employment growth in hydrologic regions. Changes in agricultural production and population growth could also affect local government fiscal conditions. Declining employment and production linked to a reduction in agricultural water deliveries could lead to a reduction in property and sales tax revenue. Similarly, population growth or employment growth limited by reduced M&I deliveries could result in foregone revenue. However, such growth could also require additional public sector expenditures for public services and utilities. Again, the location and intensity of these effects would depend on factors unique to local conditions and decisions, but as noted above, those regions most dependent on SWP and CVP deliveries would generally be anticipated to be most directly affected by reduced deliveries under this alternative.

**Climate Change and Catastrophic Seismic Risks**

Agriculture and recreation are primary economic activities in the Delta region. The potential for major seismic events, along with the potential effects of climate change, could affect ongoing agricultural and recreational uses if they resulted in the failure of levees or in climatic conditions less favorable for productive agricultural uses. Such events could also result in changes in the character of Delta communities and effects on individual homes and businesses, potentially requiring construction of new buildings. Catastrophic events resulting in levee failure could also place additional financial burdens on local governments in the Delta region. In hydrologic regions,
disruptions to Delta water deliveries could alter agricultural and industrial activities, along with general effects on water supply in hydrologic regions (See Appendix 3E, Potential Seismic and Climate Change Risks to SWP/CVP Water Supplies and Appendix 5B, Responses to Reduced South of Delta Water Supplies, for more detailed discussion of seismic and climate change risks and potential responses to reduced supplies).

Overall, the No Action Alternative would result in reduced deliveries to hydrologic regions, which could create adverse socioeconomic effects related to reduced agricultural production, employment, and the character of agricultural communities. Reductions in water deliveries could occur in areas where a large proportion of economic activity and employment is dependent on agricultural production. Reducing exports to the San Joaquin Valley and Tulare Basin would result in reduced deliveries to agricultural users and associated reduction in employment opportunities. Any reduction in water deliveries would result in an adverse effect to these affected workers’ employment and income levels. Water deliveries to southern California are made to a broad range of municipal and industrial users. To the extent that reductions in deliveries to these areas would constrain population or industrial growth, such reductions would also be expected to result in an adverse effect on employment and income. Further discussion of these potential effects is included in Chapter 28, Environmental Justice, Section 28.5.3.1, and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.4.

CEQA Conclusion: Operation of water conveyance facilities under the No Action Alternative could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.

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

Alternative 1A would result in temporary effects (construction period) on lands and communities associated with construction of five intakes and intake pumping plants, and other associated facilities; two forebays; conveyance pipelines; and tunnels. Nearby areas would be altered as work or staging areas, concrete batch plants, fuel stations, or be used for spoils storage areas. Transmission lines, access roads, and other incidental facilities would also be needed for operations, and construction of these structures would also have effects on lands and communities.

The following impact analysis is divided into four subsections: effects of construction of facilities under CM1 in the Delta region, effects of operations of facilities under CM1 in the Delta region, effects of implementation of other conservation measures, and effects in hydrologic regions outside of the Delta as a result of changes in water deliveries.

Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities

The regional economic effects on employment and labor income during construction in the Delta region were evaluated. Changes are shown relative to Existing Conditions and the No Action Alternative in Table 16-19. The table shows the direct and total (direct, indirect, and induced effects) changes that would result from conveyance-related spending. Spending on conveyance
construction would result in substantial local economic activity in the region. As shown, direct
construction employment is anticipated to vary over the 8-year construction period, with an
estimated 2,433 FTE in the first year and 165 FTE in the final year of the construction period.
Construction employment is estimated to peak at 4,390 FTE in year 4. Total employment (direct,
indirect, and induced) would peak in year 3, at 12,716 FTE.

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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
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<tr>
<td>Direct Employment Full Time Equivalent (FTE)</td>
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<td>2,714</td>
<td>4,004</td>
<td>4,390</td>
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<td>8,915</td>
<td>7,389</td>
<td>1,136</td>
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<th>3</th>
<th>4</th>
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<th>7</th>
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<tr>
<td>Direct Labor Income (million $)</td>
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<td>249.0</td>
<td>262.6</td>
<td>215.1</td>
<td>142.1</td>
<td>88.1</td>
<td>7.8</td>
<td>0.4</td>
<td>1,292.9</td>
</tr>
<tr>
<td>Total</td>
<td>596.7</td>
<td>465.3</td>
<td>509.6</td>
<td>435.9</td>
<td>300.4</td>
<td>208.8</td>
<td>24.4</td>
<td>3.4</td>
<td>2,544.5</td>
</tr>
</tbody>
</table>

Note: Labor income is reported in 2011 dollars (U.S. Department of Commerce 2012).

The footprint of conveyance and related facilities such as roads and utilities would remove some
existing agricultural land from production, so the effects on such removals on agricultural
employment and income would be negative. The regional economic effects on employment and
income in the Delta region from the change in agricultural production are reported in Table 16-20.
As shown, direct agricultural employment would be reduced by an estimated 27 FTE, while total
employment (direct, indirect, and induced) associated with agricultural employment would fall by
100 FTE. Mapbook Figures M14-1 and M14-2 display areas of Important Farmland and lands under
Williamson Act contracts that could be converted to other uses due to the construction of water
conveyance facilities for the Pipeline/Tunnel alignment. Note that not all of these structures would
be constructed under this alternative.

Table 16-20. Regional Economic Effects on Agricultural Employment and Labor Income during
Construction (Alternative 1A)

<table>
<thead>
<tr>
<th>Region Economic Impact</th>
<th>Impacts on Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment (FTE)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-27</td>
</tr>
<tr>
<td>Total</td>
<td>-100</td>
</tr>
<tr>
<td>Labor Income (million $)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-3.3</td>
</tr>
<tr>
<td>Total</td>
<td>-6.4</td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).

a IMPLAN results are changes relative to Existing Conditions or the No Action Alternative.
b Includes direct, indirect, and induced effects.
Additionally, the Alternative 1A construction footprint would result in the abandonment of an estimated six producing natural gas wells in the study area, as described in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-1. This could result in the loss of employment and labor income associated with monitoring and maintaining these wells. Generally, small crews perform ongoing monitoring and maintenance of several wells at a time. As shown in Chapter 26, *Mineral Resources*, Table 26-3, 516 active producer wells are located in the study area. Even if all six producing wells in the Alternative 1A construction footprint were abandoned and not replaced with new wells installed outside the construction footprint, the percentage reduction in the number of natural gas wells would be very small. As a result, the employment and labor income effects associated with well abandonment, while negative, would be minimal.

**NEPA Effects:** Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would increase total employment and income in the Delta region, temporarily (during the construction period). The increase in employment and income that would result from expenditures on construction would be greater than the reduction in employment and income attributable to losses in agricultural production. Changes in recreational expenditures and natural gas well operations could also affect regional employment and income, but these have not been quantified. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such physical impacts are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.2, REC-1 through REC-4; abandonment of natural gas wells is addressed in Chapter 26, *Mineral Resources*, Section 26.3.3.2, MIN-1. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an Agricultural Lands Stewardship Plan (ALSP) to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

**Population**

Construction of conveyance facilities would require an estimated peak of 4,390 workers in year 4 of the construction period. It is anticipated that many of these new jobs would be filled from within the existing five-county labor force. However, construction of the tunnels may require workers with
specialized skills not readily available in the local labor pool. As a result, it is anticipated that some
specialized workers may be recruited from outside the Delta region. As discussed in Chapter 30,
*Growth Inducement and Other Indirect Effects*, Section 30.3.2.1, Direct Growth Inducement, an
estimated 1,300 workers could come from outside of the Delta region at the peak of the construction
period.

It is anticipated that non-local workers would temporarily relocate to the Delta region, thus adding
to the local population. However, this additional population would constitute a minor increase in the
total 2020 projected regional population of 4.6 million and be distributed throughout the region.
Changes in demand for public services resulting from any increase in population are addressed in
Chapter 20, *Public Services and Utilities*, Section 20.3.3.2, Impact UT-1 through UT-6.

**Housing**

Changes in housing demand are based on changes in supply resulting from displacement during
facilities construction and changes in housing demand resulting from employment associated with
construction of conveyance facilities. As described in Chapter 13, *Land Use*, Section 13.3.3.2, Impact
LU-2, construction of water conveyance facilities under Alternative 1A would conflict with
approximately 59 residential structures.

The construction workforce would most likely commute daily to the work sites from within the
Delta region; however, if needed, there are about 53,000 housing units available to accommodate
workers who may choose to commute on a workweek basis or who may choose to temporarily
relocate to the region for the duration of the construction period, including the estimated 1,300
workers who may temporarily relocate to the Delta region from outside of the region. In addition to
the available housing units, there are recreational vehicle and mobile home parks and numerous
hotels and motels within the five-county region to accommodate any construction workers. As a
result, and as discussed in more detail in Chapter 30, *Growth Inducement and Other Indirect Effects*,
Section 30.3.2.1, Direct Growth Inducement, construction of the proposed conveyance facilities is
not expected to substantially increase the demand for housing within the five-county region.

**NEPA Effects:** Within specific local communities, there could be localized effects on housing.
However, given the availability of housing within the five-county region, predicting where this
impact might fall would be speculative. In addition, new residents would likely be dispersed across
the region, thereby not creating a burden on any one community.

Because these activities would not result in permanent concentrated, substantial increases in
population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would result in minor
temporary population increases in the Delta region, which has an adequate housing supply to
accommodate the change in population. Therefore, physical environmental impacts resulting from
the minor increase in population are not anticipated.

**Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed
Water Conveyance Facilities**

**NEPA Effects:** Throughout the five-county Delta region, population and employment would expand
as a result of the construction of water conveyance facilities, as discussed under Impacts ECON-1
and ECON-2. Agricultural contributions to the character and culture of the Delta would be likely to
decline commensurate with the projected decline in agricultural-related acreage, employment, and
production. This could result in the closure of agriculture-dependent businesses or those catering to agricultural workers, particularly in areas where conversion of agricultural land would be most concentrated, including near the intake pumping plants and forebays in the vicinity of Clarksburg and Hood. Similar effects on community character could result from anticipated changes to recreation in the study area. However, social influences associated with the construction industry would grow during the multi-year construction period for water conveyance structures under Alternative 1A. To the extent that this anticipated economic shift away from agriculture and towards construction results in demographic changes in population, employment level, income, age, gender, or ethnic origin, the study area would be expected to see changes to its character, particularly in those Delta communities most substantially affected by demographic changes based on their size, ability to accommodate growth, or proximity to BDCP activities. In comparing the existing demographic composition of agricultural workers and construction laborers within the five-county Delta Region, men make up a large proportion of both occupations: 84 percent of agricultural workers were male, compared with 98 percent of construction laborers. Approximately 92 percent of agricultural workers made less than $35,000, while 60 percent of construction laborers made less than $35,000. Additionally, 87 percent of agricultural workers within the study area report Hispanic origin, while 54 percent of construction laborers claim Hispanic origin within the five-county area (U.S. Census Bureau 2012b).

Legacy communities in the Delta, which are those identified as containing distinct historical and cultural character, include Locke, Bethel Island, Clarksburg, Courtland, Freeport, Hood, Isleton, Knightsen, Rio Vista, Ryde, and Walnut Grove. These communities provide support services and limited workforce housing for the area's agricultural industry. Some housing is also provided to retirees and workers commuting to nearby urban areas including Sacramento. Construction activities associated with BDCP water conveyance facilities would be anticipated to result in changes to the rural qualities of these communities during the construction period (characterized by predominantly agricultural land uses, relatively low population densities, and low levels of associated noise and vehicular traffic), particularly for those communities in proximity to water conveyance structures, including Clarksburg, Hood, Courtland and Walnut Grove. Effects associated with construction activities could also result in changes to community cohesion if they were to restrict mobility, reduce opportunities for maintaining face-to-face relationships, or disrupt the functions of community organizations or community gathering places (such as schools, libraries, places of worship, and recreational facilities). Under Alternative 1A, several gathering places that lie in the vicinity of construction areas could be indirectly affected by noise and traffic associated with construction activities, including Delta High School, the Clarksburg Library, Clarksburg Community Church, Equipping Christian Center, and several marinas or other recreational facilities (see Chapter 15, Recreation, Table 15-11). Additionally, as described in Chapter 20, Public Services and Utilities, a fire station in the community of Hood would be directly affected by construction of a conveyance pipeline under this alternative and accordingly, its function as a workplace and as a community gathering place may be relocated.

In addition to potential changes in the demographic composition of communities in the study area, construction of water conveyance facilities under Alternative 1A could also affect the size of the communities, as suggested above. Based upon the projections developed under Impacts ECON-1 and ECON-2, the total population and employment base of the study area would expand during water facility construction. This expansion could provide economic opportunities during this period, which could support community stability by increasing investment in Delta communities. However, as
Socioeconomics

noted under the discussion of housing above, predicting the specific location of such investments within the study area would be speculative.

Under Alternative 1A, additional regional employment and income could create net positive effects on the character of Delta communities. In addition to potential demographic effects associated with changes in employment, however, property values may decline in areas that become less desirable in which to live, work, shop, or participate in recreational activities. For instance, negative visual- or noise-related effects on residential property could lead to localized abandonment of buildings. While water conveyance construction could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise as a result of declining economic stability in communities closest to construction effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce adverse effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito Management Plans.

**CEQA Conclusion:** Construction of water conveyance facilities under Alternative 1A could affect community character in the Delta region during the construction work period. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-2 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment. However, implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan, and Coordinate with Mosquito Vector Control Districts and Prepare and Implement Mosquito Management Plans.

**Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 1A, publicly-owned water conveyance facilities would be constructed on land of which some is currently held by private owners. Property tax and assessment revenue forgone as a result of water conveyance facilities is estimated at $8.3 million over the construction period with an estimated annual range effect of $1.0 million. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the BDCP, such as reclamation districts where conveyance facilities and associated work areas are proposed. This economic effect would be considered adverse; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for constructing.
locating, operating, or mitigating for new Delta water conveyance facilities. Additionally, as discussed under Impact ECON-1, construction of the water conveyance facilities would be anticipated to result in a net temporary increase of income and employment in the Delta region. This would also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Under Alternative 1A, construction of water conveyance facilities would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the construction period, property tax and assessment revenue forgone is estimated at $8.3 million. However, the Sacramento–San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** While facility construction would not physically displace any recreational facilities, substantial disruption of recreational activities considered temporary and permanent would occur in certain areas during the construction period, as described and defined in Chapter 15, *Recreation*, Section 15.3.3.2, Impacts REC-1 through REC-4. The quality of recreational activities including boating, fishing, waterfowl hunting, and hiking in the Delta could be affected by noise, lighting, traffic, and visual degradation in proximity to water conveyance construction. For example, in-water construction activities associated with the intakes or temporary barge areas could restrict navigation and create noise and vibration that could lead to lower fishing success rates. Were it to occur, a decline in visits to Delta recreational sites as a result of facility construction would be expected to reduce recreation-related spending, creating an adverse effect throughout the Delta region. Additionally, if construction activities shift the relative popularity of different recreational sites, the BDCP may carry localized beneficial or adverse effects.

Access would be maintained to all existing recreational facilities, including marinas, throughout construction. As part of Mitigation Measure REC-2, BDCP proponents would enhance nearby fishing access sites and would incorporate public recreational access into design of the intakes along the Sacramento River. Implementation of this measure along with separate, non-environmental commitments as set forth in Appendix 3B, *Environmental Commitments*, relating to the enhancement of recreational access and control of aquatic weeds in the Delta would reduce these effects. Environmental commitments would also be implemented to reduce some of the effects of construction activities upon the recreational experience. These include providing notification of

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7 Under the Sacramento-San Joaquin Delta Reform Act of 2009 (85089), construction of a new conveyance facility cannot begin until “the persons or entities that contract to receive water from the State Water Project and the federal Central Valley Project or a joint powers authority representing those entities have made arrangements or entered into contracts to pay for... (b) Full mitigation of property tax or assessments levied by local governments or special districts for land used in the construction, location, mitigation, or operation of new Delta conveyance facilities.”
maintenance activities in waterways and developing and implementing a noise abatement plan, as
described in Appendix 3B, Environmental Commitments. Similarly, mitigation measures proposed
throughout other chapters of this document, and listed under Impact REC-2 in Chapter 15,
Recreation, would also contribute to reducing construction effects on recreational experiences in the
study area. These include Chapter 12, Terrestrial Biological Resources, Chapter 17, Aesthetics and
Visual Resources, Chapter 19, Transportation, and Chapter 23, Noise.

Construction of water conveyance structures would be anticipated to result in a lower-quality
recreational experience in a number of localized areas throughout the Delta, despite the
implementation of environmental commitments. With a decrease in recreational quality,
particularly for boating and fishing (two of the most popular activities in the Delta), the number of
visits would be anticipated to decline, at least in areas close to construction activities. Under this
alternative, seven recreational sites or areas would experience periods of construction-related
effects, including noise, access, visual disturbances, or a combination of these effects. These include
Clarksburg Boat Launch (fishing access), Stone Lakes National Wildlife Refuge, Georgiana Slough
Fishing Access, Cosumnes River Reserve, Bullfrog Landing Marina, Whiskey Slough Harbor Marina,
and Clifton Court Forebay. Fewer visits to these sites or areas would lead to less spending, creating
an adverse effect. While visitors can adjust their recreational patterns to avoid areas substantially
affected by construction activities (by boating or fishing elsewhere in the Delta, for instance),
recreation-dependent businesses including marinas and recreational supply retailers may not be
able to economically weather the effects of multiyear construction activities and may be forced to
close as a result, even while businesses in areas that become more popular could benefit. Overall,
the multi-year schedule and geographic scale of construction activities and the anticipated decline in
recreational spending would be considered an adverse effect. The commitments and mitigation
measures cited above would contribute to the reduction of this effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities under Alternative 1A
would impact recreational revenue in the Delta region where construction activities result in fewer
visits to an area. Fewer visits would be anticipated to result in decreased economic activity related
to recreational activities. This section considers only the economic effects of recreational changes
brought about by construction of the proposed water conveyance facilities. Potential physical
changes to the environment relating to recreational resources are described and evaluated in
Chapter 15, Recreation, Section 15.3.3.2, REC-1 through REC-4.

**Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of
the Proposed Water Conveyance Facilities**

Construction of conveyance facilities would convert land from existing agricultural uses to uses that
include direct facility footprints, construction staging areas, borrow/spoil areas, reusable tunnel
material (RTM) storage, temporary and permanent roads, and utilities. Agricultural land could also
be affected by changes in water quality and other conditions that would affect crop productivity.
These direct effects on agricultural land are described in Chapter 14, Agricultural Resources, Section
14.3.3.2, Impacts AG-1 and AG-2.

Changes in crop acreage were used to describe the associated changes in economic values. Unit
prices, yields, and crop production and investment costs were presented in Section 16.1,
Environmental Setting/Affected Environment. Table 16-21 summarizes the changes in acreage and
value of agricultural production that would result in the Delta region as a result of Alternative 1A
construction. Changes are shown relative to the Existing Conditions and the No Action Alternative
by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The table also includes a summary of changes in crop acreages that are reported in greater detail in Appendix 14A, *Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction*.

**Table 16-21. Crop Acres and Value of Agricultural Production in the Delta during Construction (Alternative 1A)**

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 1A</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>478.1</td>
<td>-5.6</td>
</tr>
<tr>
<td>Grains</td>
<td>58.1</td>
<td>-0.6</td>
</tr>
<tr>
<td>Field crops</td>
<td>189.4</td>
<td>-1.7</td>
</tr>
<tr>
<td>Forage crops</td>
<td>111.4</td>
<td>-1.4</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>76.6</td>
<td>-0.5</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>42.6</td>
<td>-1.4</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>641.1</td>
<td>-8.9</td>
</tr>
<tr>
<td>Grains</td>
<td>24.0</td>
<td>-0.2</td>
</tr>
<tr>
<td>Field crops</td>
<td>112.8</td>
<td>-1.0</td>
</tr>
<tr>
<td>Forage crops</td>
<td>72.0</td>
<td>-1.1</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>266.5</td>
<td>-1.8</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>165.7</td>
<td>-4.9</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).

Total value of irrigated crop production in the Delta would decline on average by $8.9 million per year during the construction period, with total irrigated crop acreage declining by about 5,600 acres. These estimates are not dependent on water year type.

Alternative 1A may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints and longer travel times due to facilities construction. Construction designs and costs have provided for such costs in two ways. In most cases, affected lands fall within the facilities footprint, and are included in the agricultural acreage and value of production described elsewhere in this chapter and in Chapter 14, *Agricultural Resources,* Section 14.3.3.2. For potentially affected lands not included in the facilities footprint, conveyance construction costs include temporary and permanent roads, bridges, and other facilities as needed to service agricultural lands (California Department of Water Resources 2010a, 2010b). There could be some additional travel time and other costs associated with using these facilities, but such costs are not environmental impacts requiring mitigation.

Loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction. The value of structures and equipment potentially affected would vary widely across parcels. Much of the equipment is portable (e.g., machinery, tools, portable sprinkler pipe), and could be sold or used on other lands. Shop and storage buildings and permanent irrigation and drainage equipment plus orchards and vineyards may have little or no salvage value. The negotiated purchase of lands for the conveyance and associated facilities would compensate for some, but perhaps not all of that value. According to Cooperative Extension cost of production studies (University of California Cooperative Extension 2003a, 2003b, 2004, 2005, 2006a, 2006b,
2007a, 2007b, 2008a, 2008b, 2008c, 2008d), permanent structures, irrigation systems, and drainage systems can represent a wide range of investment, from less than $100 per acre for field and vegetable crops up to over $3,000 per acre for some orchards. Most such investments would not be new, so their depreciated values would be substantially lower.

Investment in standing orchards and vineyards would also be considered during negotiations for land purchases. Typical investments required to bring permanent crops into production are shown in Section 16.1, Environmental Setting/Affected Environment. For example, the establishment of wine grapes requires an investment of over $15,000 per acre and Bartlett pears require over $20,000 per acre. Forage crops such as irrigated pasture and alfalfa may require an establishment cost of about $400 per acre. The depreciated values of the growing stock could be substantially below these establishment costs, depending on the ages of the stands that would be affected.

Only minor changes in salinity of agricultural water supply are expected during construction. Consequently, costs related to salinity changes would also be minor. Further discussion of effects from changes in salinity is presented in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-2.

**NEPA Effects:** Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

In the Delta region, ongoing operation and maintenance of BDCP facilities would result in increased expenditures relative to the Existing Conditions and the No Action Alternative (regional economic conditions do not differ across Existing Conditions and No Action Alternative). The increased project operation and maintenance expenditures are expected to result in a permanent increase in regional employment and income (Table 16-22) relative to the Existing Conditions and the No Action Alternative, including an estimated 187 direct and 269 total (direct, indirect, and induced) FTE. Potential changes in the value of agricultural production result in changes to regional employment and income in the Delta region under the Alternative 1A relative to the Existing Conditions and the No Action Alternative.
Table 16-22. Regional Economic Effects on Employment and Labor Income in the Delta Region during Operations and Maintenance (Alternative 1A)

<table>
<thead>
<tr>
<th>Regional Economic Impact&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Impacts from Operations and Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment (FTE)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>187</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>269</td>
</tr>
<tr>
<td><strong>Labor Income</strong> (million $)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>11.4</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>15.3</td>
</tr>
</tbody>
</table>

Note: Labor income is reported in 2011 dollars (U.S. Department of Commerce 2012).  
<sup>a</sup> IMPLAN results are changes relative to Existing Conditions or the No Action Alternative.  
<sup>b</sup> Includes direct, indirect & induced effects.

The operation and maintenance of conveyance and related facilities such as roads and utilities would result in the permanent removal of agricultural land from production following construction, and the effects on employment and income would be negative, including the loss of an estimated 31 agricultural and 86 total (direct, indirect, and induced) FTE jobs. The regional economic effects on employment and income in the Delta region from the change in agricultural production are reported in Table 16-23. Mapbook Figures M14-1 and M14-2 display areas of Important Farmland and lands under Williamson Act contracts that could be converted to other uses due to the construction of water conveyance facilities for the Pipeline/Tunnel alignment. Note that not all of these structures would be constructed under this alternative.

Table 16-23. Regional Economic Effects on Agricultural Employment and Labor Income during Operations and Maintenance (Alternative 1A)

<table>
<thead>
<tr>
<th>Regional Economic Impact&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Impacts on Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment (FTE)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-31</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-86</td>
</tr>
<tr>
<td><strong>Labor Income</strong> (million $)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-2.5</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-4.8</td>
</tr>
</tbody>
</table>

Note: Labor income is reported in 2011 dollars (U.S. Department of Commerce 2012).  
<sup>a</sup> IMPLAN results are changes relative to Existing Conditions or the No Action Alternative.  
<sup>b</sup> Includes direct, indirect & induced effects.

**NEPA Effects:** Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.
**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would increase total employment and income in the Delta region. The net change would result from expenditures on operation and maintenance and from changes in agricultural production. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.2, Impacts REC-5 through REC-8. When required, DWR would provide compensation to landowners as a result of acquiring lands for the proposed conveyance facilities. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**Population**

Operations and maintenance of conveyance facilities would require approximately 190 permanent new workers. Given the nature of those operation and maintenance jobs, the existing water conveyance facilities already in the five-county region, the large workforce in the region, and the large water agencies with headquarters in that region, it is anticipated that most of these new jobs would be filled from within the existing five-county labor force. However, operation and maintenance may require specialized worker skills not readily available in the local labor pool. As a result, it is anticipated that workers with specialized skills may be recruited from outside the five-county region.

It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Changes in demand for public services resulting from any increase in population are addressed in Chapter 20, *Public Services and Utilities*, Section 20.3.3.2, Impact UT-7.

**Housing**

It is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing. There are about 53,000 housing units available to accommodate any nonlocal workers who relocate to the five-county region. In addition, new residents would likely be dispersed across the region, thereby not creating a burden on any one community. As a result, operation and maintenance of the proposed conveyance facilities is not expected to increase the demand for housing.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.
**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population and therefore adverse changes in the physical environment are not anticipated.

**Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Throughout the five-county Delta region, population and employment could slightly expand as a result of continued operation and maintenance of the water conveyance facilities. Agricultural contributions to the character and culture of the Delta would be likely to decline commensurate with the projected decline in agricultural-related employment and production. This could result in the closure of agriculture-dependent businesses or those catering to agricultural employees, particularly in areas where conversion of agricultural land would be most concentrated. Similar effects could accrue to areas disproportionately dependent upon existing recreational activities. However, influences associated with those hired to operate, repair, and maintain water conveyance facilities would grow. To the extent that this anticipated economic shift away from agriculture results in demographic changes in population, employment level, income, age, gender, or race, the study area would be expected to see changes to its character, particularly in those Delta communities most substantially affected by demographic changes based on their size or proximity to BDCP facilities.

While some of the rural qualities of Delta communities, including relatively low noise and traffic levels, could return to near pre-construction conditions during the operational phase, other effects would be lasting. For instance, the visual appearance of intakes and other permanent features would compromise the predominantly undeveloped and agricultural nature of communities like Clarksburg, Courtland, and Hood, which would be located closest to the permanent water conveyance features. Lasting effects on areas made less desirable in which to live, work, shop, or participate in recreational activities as a result of BDCP operations could lead to localized abandonment of buildings. Such lasting effects could also result in changes to community cohesion if they were to restrict mobility, reduce opportunities for maintaining face-to-face relationships, or disrupt the functions of community organizations or community gathering places (such as schools, libraries, places of worship, and recreational facilities). While ongoing operations could result in beneficial effects relating to the economic welfare of a community, adverse social effects could linger in communities closest to character-changing effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments include Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, and Prepare and Implement Mosquito Management Plans.

**CEQA Conclusion:** Operation and maintenance of water conveyance facilities under Alternative 1A could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, these impacts are described under Impact ECON-8 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.
Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities

**NEPA Effects:** Under Alternative 1A, publicly-owned water conveyance facilities would be located, operated, and maintained on land of which some is currently held by private owners. Property tax and assessment revenue forgone as a result of water conveyance facilities is estimated at $50.0 million over the BDCP’s 50-year permit period. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the BDCP. This economic effect would be considered adverse; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for constructing, locating, operating, or mitigating for new Delta water conveyance facilities. Additionally, as discussed under Impact ECON-7, operation and maintenance of the water conveyance facilities would be anticipated to result in a net increase of income and employment in the Delta region. This would also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Under Alternative 1A, the ongoing operation and maintenance of water conveyance facilities would restrict property tax revenue levels for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated at $50.0 million. However, the Sacramento-San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities

**NEPA Effects:** As discussed in Chapter 15, Recreation, Section 15.3.3.2, Impacts REC-5 through REC-8, operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 1A are anticipated to create minor effects on recreational resources. Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. As discussed in Impact REC-7, most intake maintenance, such as painting, cleaning, and repairs, would be done with barges and divers, and could cause a temporary impediment to boat movement in the Sacramento River in the immediate vicinity of the affected intake structure and reduce opportunities for waterskiiing, wakeboarding, or tubing in the immediate vicinity of the intake structures. However, boat passage and navigation on the river would still be possible around any barges or other maintenance equipment and these effects would be expected to be short-term (2 years or less). Although water-based recreation (i.e. boating, waterskiing, wakeboarding, etc.) may be restricted at and in the vicinity of intakes, many miles of the Sacramento River would still be usable for these activities during periodic maintenance events. Additionally, implementation of the environmental commitment to provide notification of construction and maintenance activities in waterways (Appendix 3B, Environmental Commitments) would reduce these effects. Because effects of facility...
maintenance would be short-term and intermittent, substantial economic effects are not anticipated to result from operation and maintenance of the facilities.

**CEQA Conclusion:** Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 1A are anticipated to create minor effects on recreational resources and therefore, are not expected to substantially reduce economic activity related to recreational activities. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, *Recreation*, Section 15.3.3.2, Impacts REC-5 through REC-8.

**Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

During operation and maintenance of conveyance facilities, existing agricultural land would be in uses that include direct facility footprints and associated permanent roads and utilities. Agricultural land could also be affected by changes in water quality and other conditions that would affect crop productivity. These direct effects on agricultural land are described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impacts AG-1 and AG-2.

Changes in crop acreage were used to estimate the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, *Environmental Setting/Affected Environment*. Table 16-24 summarizes the changes in acreage and value of agricultural production that would result in the Delta region from operation of Alternative 1A. Changes are shown relative to the Existing Conditions and the No Action Alternative by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The changes in crop acreages are reported in greater detail in Appendix 14A, *Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction*.

Total value of irrigated crop production in the Delta region would decline on average by $7.4 million per year during operation and maintenance, with total irrigated crop acreage declining by about 4,400 acres. These estimates are not dependent on water year type.
Table 16-24. Crop Acres and Value of Agricultural Production in the Delta during Operations and Maintenance (Alternative 1A)

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 1A</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>479.2</td>
<td>-4.4</td>
</tr>
<tr>
<td>Grains</td>
<td>58.3</td>
<td>-0.4</td>
</tr>
<tr>
<td>Field crops</td>
<td>189.8</td>
<td>-1.3</td>
</tr>
<tr>
<td>Forage crops</td>
<td>111.6</td>
<td>-1.2</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>76.7</td>
<td>-0.4</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>42.8</td>
<td>-1.2</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>642.7</td>
<td>-7.4</td>
</tr>
<tr>
<td>Grains</td>
<td>24.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>Field crops</td>
<td>113.1</td>
<td>-0.8</td>
</tr>
<tr>
<td>Forage crops</td>
<td>72.1</td>
<td>-1.0</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>266.9</td>
<td>-1.5</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>166.5</td>
<td>-4.0</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).

Alternative 1A may also affect production costs on lands even if gross revenues are largely unaffected. Increased costs could be associated with operational constraints and longer travel times due to permanent facilities. In most cases, affected lands fall within the facilities footprint, and are included in the agricultural acreage and value of production described elsewhere in this chapter and in Chapter 14, *Agricultural Resources*, Section 14.3.3.2.

Crop yields and crop selection on lands in the Delta affected by changes in salinity of agricultural water supply during operation and maintenance activities are described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-2.

**NEPA Effects:** The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** During operation and maintenance of the proposed water conveyance facilities, the value of agricultural production in the Delta region would be reduced. The permanent removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for...
Socioeconomics

loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. The effects on the economy of the Delta region would be similar in kind, though not in magnitude, to those estimated for conveyance features and facilities. In general, the changes in regional economic activity (employment and income) would include increases from the construction and operation and maintenance-related activity, declines resulting from agricultural or other land uses converted or impaired, changes in recreation spending that could be positive or negative depending on the specific restoration action, and declines from abandonment of natural gas wells.

The Yolo Bypass Flood Date and Flow Volume Agricultural Impact Analysis, a report created for Yolo County, evaluates the expected losses of agricultural employment that could result from implementing CM2 (Howitt et al. 2012) (see Chapter 3, Description of Alternatives, Section 3.6.2, for a description of conservation measures). CM2 would lower a portion of the Fremont Weir to allow Sacramento River water to flow into the Yolo Bypass to reduce migratory delays for fish and enhance fish rearing habitat. However, it may also translate into financial losses for farmers and the regional economy. Annual reductions in agricultural employment under the CM2 scenario are expected to range from 9 FTE at 3,000 cfs to 21 FTE at 6,000 cfs.

As discussed in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5, operations of natural gas wells in the Delta region would be affected where wells are located in restoration areas to be inundated under Conservation Measures 4, 5, and 10. In areas that would be permanently inundated under these conservation measures, producing natural gas wells may be abandoned. There are approximately 233 active wells in these areas (Table 26-5 in Chapter 26, Mineral Resources); an unknown number of these wells would likely be abandoned. (Specific inundation areas have not been identified for Conservation Measures 2-22 at this time, and there is potential for some of these wells to be modified and to remain in production.) In permanently flooded areas, the active wells could be relocated and replaced using conventional or directional drilling techniques at a location outside of inundation zones to maintain production. However, if a large number of wells had to be abandoned and could not be redrilled, there could be an adverse effect related to the permanent elimination of employment and income generated by well monitoring and maintenance activities. Generally, small crews perform ongoing monitoring and maintenance of several wells at a time. Assuming none of the wells in inundation areas are redrilled, the abandonment of 233 natural gas wells would represent 37 percent of the 629 producing wells in the Delta region (see active producer, dual, and new wells in Table 26-2 in Chapter 26, Mineral Resources). According to 2011 data available through the U.S. Census Bureau’s 2011 County Business Patterns report (2013), an estimated 255-310 jobs are supported by the two sectors of the Delta region economy that could be affected by well abandonment: crude petroleum and natural gas extraction, and support activities for oil and gas operations. (Note that these jobs include non-natural gas production jobs and non-operations and maintenance jobs, so the number of jobs solely related to operations and maintenance of natural gas wells would be smaller.) Assuming a worst-case scenario in which the loss of 37 percent of the Delta region's natural gas wells would result in the loss of a similar percentage of the region’s employment in these two sectors, an estimated 95-115 jobs would be lost as the result of implementing Conservation Measures 4, 5, and 10. However, considering that this

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estimate is high and that some wells would be relocated, the actual job losses probably would be somewhat lower.

**NEPA Effects:** Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related and natural gas production-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, measures to reduce impacts on natural gas wells are discussed in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impacts AG-3 and AG-4; changes in recreation-related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.2, Impacts REC-9 through REC-11; abandonment of natural gas wells is addressed in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land and abandonment of natural gas wells, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts and impacts on natural gas wells are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5.

**Impact ECON-14: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22**

**NEPA Effects:** In the Delta region, implementation of Conservation Measures 2–22 would increase employment and convert land from existing uses, including possible displacement of residential housing and business establishments. The effects on population and housing in the Delta region would be similar in kind, though not in magnitude, to those estimated for conveyance features and facilities. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired. Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-
county Delta region, and dispersed throughout the region. Therefore, significant changes in the physical environment are not anticipated to result.

**Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22**

**NEPA Effects:** As noted under Impacts ECON-13, and ECON-14, conservation measures designed to restore, conserve, or enhance natural habitat would be anticipated to create economic effects similar in kind, if not in magnitude, to those described for the water conveyance facilities, including increases to employment and changes in land use that could trigger the disruption of agricultural and recreational economies. They could also affect the possible displacement of residences and businesses. The effects these activities would create with regard to community character would depend on the nature of each measure along with its specific location, size, and other factors that are not yet defined.

Under Alternative 1A, temporary construction associated with implementation of these measures could lead to demographic changes and resulting effects on the composition and size of Delta communities. Earthwork and site preparation associated with conservation measures could also detract from the rural qualities of the Delta region; however, their implementation would take place in phases over the 50-year permit period, which would limit the extent of effects taking place at any one point in time.

Implementation of these measures could also alter community character over the long term. Conversion of agricultural land to restored habitat would result in the erosion of some economic and social contributions stemming from agriculture in Delta communities. However, in the context of the Delta region, a substantial proportion of land would not be converted. Additionally, restored habitat could support some rural qualities, particularly in terms of visual resources and recreational opportunities. These effects could attract more residents to some areas of the Delta, and could replace some agricultural economic activities with those related to recreation and tourism. To the extent that agricultural facilities and supportive businesses were affected and led to vacancy, alteration of community character could result from these activities. However, the cultivated lands natural community strategy of CM3 would ensure the continuation of agricultural production on thousands of acres in the Delta (see Chapter 3, *Description of Alternatives*, Section 3.6.2, for a description of conservation measures).

While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise in those communities closest to character-changing effects and those most heavily influenced by agricultural activities. Noise, visual effects, air pollution, and traffic associated with earthwork and site preparation for the restoration, enhancement, protection, and management of various natural community types could alter the rural characteristics of Delta communities, where they occur in close proximity to these communities. Additionally, changes in the extent and nature of regional agricultural and recreational activities could also be anticipated to alter the character of communities in the Delta and result in changes to community cohesion. If necessary, implementation of mitigation measures and environmental commitments related to transportation, agriculture, and recreation would be anticipated to reduce these adverse effects (see Appendix 3B, *Environmental Commitments*). Specifically, these commitments include the Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan,
and Coordinate with Mosquito Vector Control Districts and Prepare and Implement Mosquito
Management Plans.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 under Alternative 1A could affect community character within the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character are related to physical impacts involving population growth, these impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

**Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing the Proposed Conservation Measures 2–22**

As discussed in relation to construction of water conveyance facilities, habitat restoration and implementation of Conservation Measures 2–22 under Alternative 1A would also take place, in part, on land held by private owners and from which local governments derive revenue through property taxes and assessments. In particular, conservation measures related to protection of natural communities (CM3) and restoration of tidal habitat (CM4), seasonally inundated floodplain (CM5), grassland communities (CM8), vernal pool complex (CM9), and nontidal marsh (CM10) would require the acquisition of multiple parcels of land (see Chapter 3, *Description of Alternatives*, Section 3.6.2, for a description of conservation measures).

The *Yolo Bypass Flood Date and Flow Volume Agricultural Impact Analysis*, as described under Impact ECON-13, evaluates the expected losses of total Yolo County revenue and state tax revenue for implementing CM2 (Howitt et al. 2012) (see Chapter 3, *Description of Alternatives*, Section 3.6.2, for a description of conservation measures). The total expected annual losses in state and local tax revenues under the CM2 proposed inundation scenarios can range from $.057 million under the 3,000 cfs flow scenario to $.13 million under the 6,000 cfs flow scenario that extends flooding as late as May 15.

The loss of a substantial portion of an entity's tax base would represent an adverse effect on an agency, resulting in a decrease in local government's ability to provide public goods and services. Under Alternative 1A, property tax and assessment revenue foregone as a result of conservation measure implementation is estimated to reach $176.7 million over the BDCP's 50-year permit period (in 2012 undiscounted dollars; see BDCP Chapter 8, *Implementation Costs and Funding Sources*, Table 8-28 for further detail). Decreases in revenue could potentially represent a substantial share of individual agency tax bases, particularly for smaller districts affected by large, contiguous areas identified for habitat restoration.

Additionally, other conservation measures related to control of invasive species, expansion of fish hatchery facilities, installation of non-physical fish barriers, modification of water diversions, or treatment of urban stormwater may also require that land currently on property tax rolls be acquired and eventually removed from the tax base. The fiscal effects stemming from these conservation measures are, however, anticipated to be minor based upon the relatively small areas of land necessary for their implementation.

**NEPA Effects:** Overall, Conservation Measures 2–22 would remove many acres of private land from local property tax and assessment rolls. This economic effect would be considered adverse;
however, the BDCP proponents would offset forgone property tax and assessments levied by local
governments and special districts on private lands converted to habitat. As described under Impact
ECON-13, regional economic effects from the implementation of Conservation Measures 2–22 would
be mixed. While activities associated with construction and establishment of habitat areas could
boost regional expenditures and sales tax revenue, reduced agricultural activities may offset these
gains. Changes in recreation spending and related sales tax revenue could be positive or negative,
depending on the implementation of the measures.

**CEQA Conclusion:** Under Alternative 1A, implementation of Conservation Measures 2–22 would
result in the removal of a portion of the property tax base for various local government entities in
the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is
estimated to reach $173 million, compared with annual property tax revenue of more than $934
million in the Delta counties (California State Controller’s Office 2012). Projected over the 50-year
period, these removals would likely represent less than 1% of these counties’ property tax revenue.
However, the BDCP proponents would compensate local governments and special districts for this
forgone revenue. CEQA does not require a discussion of socioeconomic effects except where they
would result in physical changes. If an alternative is not anticipated to result in a physical change to
the environment, it would not be considered to have a significant impact under CEQA (CEQA
Guidelines Sections 15064(f) and 15131).

**Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the
Proposed Conservation Measures 2–22**

**NEPA Effects:** Implementation of the Conservation Measures 2–22 under this alternative would be
anticipated to create an adverse effect on recreational resources by limiting access to facilities,
restricting boat navigation and disturbing fish habitat while restoration activities are taking place.
These measures may also permanently reduce the extent of upland recreation sites. However, over
the 50-year permit period, these components could also create beneficial effects by enhancing
aquatic habitat and fish abundance, expanding the extent of navigable waterways available to
boaters, and improving the quality of existing upland recreation opportunities. Therefore, the
potential exists for the creation of adverse and beneficial effects related to recreational economics.
Adverse effects would be anticipated to be primarily limited to areas close to restoration areas and
during site preparation and earthwork phases. These effects could result in a decline in visits to the
Delta and reduction in recreation-related spending, creating an adverse economic effect throughout
the Delta. Beneficial recreational effects would generally result during later stages of the BDCP
permit period as Conservation Measures 2–22 are implemented and environmental conditions
supporting recreational activities are enhanced. These effects could improve the quality of
recreational experiences, leading to increased economic activities related to recreation, particularly
in areas where conservation measure implementation would create new recreational opportunities.

**CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
conservation measures would limit opportunities for recreational activities where they occur in or
near existing recreational areas. Noise, odors, and visual effects of construction activities would also
temporarily compromise the quality of recreation in and around these areas, leading to potential
economic impacts. However, over time, implementation could improve the quality of existing
recreational opportunities, leading to increased economic activity. This section considers only the
economic effects of recreational changes brought about by conservation measure implementation.
CEQA does not require a discussion of socioeconomic effects except where they would result in
reasonably foreseeable physical changes. Potential physical changes to the environment relating to
recreational resources are described and evaluated in Chapter 15, *Recreation*, Section 15.3.3.2, Impacts REC-9 through REC-11.

**Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22**

Conservation Measures 2–22 would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents would provide compensation to property owners for losses due to implementation of the alternative.

The *Yolo Bypass Flood Date and Flow Volume Agricultural Impact Analysis*, as described in Impact ECON-13, also evaluates the expected losses in gross farm revenue that could result from implementing CM2 (Howitt et al. 2012) (see Chapter 3, *Description of Alternatives*, Section 3.6.2, for a description of conservation measures). Direct gross farm revenue losses are expected to be less than $1.5 million per year. Total output value (gross farm revenue) expected losses for the CM2 scenario, which corresponds to supplemental releases only in years where natural flooding occurs, range from $1.2 to $2.8 million per year. Expected losses are zero in years when there is no natural flooding and substantial in years when there is late natural flooding. Expected loss estimates are sensitive to changes in area inundated, yield loss and crop prices. It assumed that the costs of production in the Bypass remain constant even with late flooding; however, if production costs go up, for example, due to overtime labor or increased preparation costs, loss estimates would increase.

The report also evaluates the loss to total value added, or the net value of agricultural production in the Yolo Bypass to the Yolo County economy. Recognizing that many inputs/outputs are produced or consumed outside of Yolo County, those factors are not considered in the analysis. For example, total value added does include compensation for employees, income to business and landowners, and other business specific to Yolo County, but does not include food production that is exported out of the county. A proportion of Yolo Bypass production and crop consumption occurs within Yolo County; therefore, the expected annual losses to value added for Yolo County is expected to range from $0.63 to $1.5 million per year.

**NEPA Effects:** Because implementation of Conservation Measures 2–22 would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic
losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions**

As described in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2, the operational components of BDCP Conservation Measure 1 could result in a number of effects in areas receiving SWP and CVP water deliveries outside of the Delta.

Changes in the amount, cost, or reliability of water deliveries could create socioeconomic effects in the hydrologic regions. To the extent that unreliable or insufficient water supplies currently represent obstacles to agricultural production, Alternative 1A may support more stable agricultural activities by enabling broader crop selection or by reducing risk associated with uncertain water deliveries. As a result of an increase in water supply and supply reliability, farmers may choose to leave fewer acres fallow and/or plant higher-value crops. While the locations and extent of any increases in production would depend on local factors and individual economic decisions, a general increase in production would be anticipated to support growth in seasonal and permanent on-farm employment, along with the potential expansion of employment in industries closely associated with agricultural production. These include food processing, agricultural inputs, and transportation. Generally, these effects would be most concentrated in hydrologic regions where agriculture is a primary industry and where agricultural operations depend most heavily on SWP and CVP deliveries.

**Changes in SWP Deliveries Compared to No Action Alternative**

Compared to No Action Alternative (2060), Alternative 1A would increase deliveries to all hydrologic regions except for the San Joaquin River Region, which would experience no change in deliveries. Compared to the No Action Alternative (2060), South Coast would receive the largest net increase (up to 308 TAF of Table A plus Article 21 deliveries) among the regions, which represents 68% of the net increase in Table A plus Article 21 M&I deliveries under Alternative 1A (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-16, for more information).

**Changes in CVP Deliveries Compared to No Action Alternative**

Alternative 1A would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to the No Action Alternative (2060), Alternative 1A would result in increased deliveries to the other hydrologic regions. Compared to the No Action Alternative (2060) San Francisco Bay is projected to receive the largest potential increase (5 TAF) among the hydrologic regions (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-17 for more information).

**NEPA Effects:** Increases in average annual water deliveries to service areas could induce population growth and new housing to accommodate growth. Such deliveries could also provide support for water-intensive industries. As discussed in Chapter 30, *Growth Inducement and Other Indirect Effects*...
Effects, Section 30.3.2.5, long-term water supply reliability is an important component in enabling long-term population increases. However, other factors—including natural growth, employment opportunities, local policy, and quality of life—are more likely to determine population growth. Nonetheless, population growth could stimulate economic activity resulting from increased demand for goods and services. This increased demand could create broad economic benefits for regions whose growth is supported by increased deliveries under BDCP.

Social changes, including changes in community character, could also result from an expansion in population or economic activity linked to changes in water deliveries. For example, more stable agricultural production and associated economic activities in areas where agriculture is a predominant industry could strengthen and reinforce existing economic and social patterns and institutions. Increased production could also intensify existing socioeconomic challenges, including seasonal cycles in employment, housing demand, and provision of social services. In areas where population growth would be enabled by increased water supplies or reliability, changes to community character could result from an increased population, including the potential for changes in urban form, environmental factors such as traffic or noise, demographic composition, or the rise of new or broader economic or social opportunities. Again, the nature and extent of such changes would be predominantly influenced by prevailing socioeconomic forces, rather than any specific change associated with implementation of the BDCP.

Changes in agricultural production and population growth could also affect local government fiscal conditions. Population growth would be anticipated to result in higher property and sales tax revenue while increased agricultural activity could result in higher sales tax receipts for a local jurisdiction. However, growth would also require expanded public services to meet the needs of a larger population and a larger economic base. Expansion could require additional spending on education, police and fire protection, medical services, and transportation and utility infrastructure. Whether such growth would result in a long-term net benefit or cost would depend on a number of factors including prevailing local service levels and tax rates, as well as the characteristics of the growth.

Changes in water deliveries associated with operation of Alternative 1A could result in beneficial or adverse socioeconomic effects in areas receiving water from the SWP and CVP. In hydrologic regions where water deliveries are predicted to increase when compared with the No Action Alternative, more stable agricultural activities could support employment and economic production associated with agriculture. Where M&I deliveries increase, population growth could lead to general economic growth and support water-intensive industries. Such changes could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, growth associated with deliveries could require additional expenditures for local governments while also supporting increases in revenue.

**CEQA Conclusion:** As described above, the operational components of BDCP Conservation Measure 1 could result in a number of effects in areas receiving SWP and CVP water deliveries outside of the Delta.

**Changes in SWP Deliveries Compared to Existing Conditions**

Compared to Existing Conditions, Alternative 1A would increase deliveries to all hydrologic regions except for the San Joaquin River Region, which would experience no change in deliveries. South Coast would receive the largest net increase (up to 239 TAF of Table A plus Article 21 deliveries) among the regions, which represents 70% of the net increase in Table A plus Article 21 M&I
deliveries under Alternative 1A (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-16 for more information).

### Changes in CVP Deliveries Compared to Existing Conditions

Alternative 1A would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan, and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to Existing Conditions, Alternative 1A would result in decreased deliveries to the other hydrologic regions. Compared to Existing Conditions, San Francisco Bay is projected to receive the largest decrease (2 TAF) among the hydrologic regions (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-17 for more information).

### Summary

Operation of water conveyance facilities under Alternative 1A could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.

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

Alternative 1B would result in temporary effects on land and communities in the study area associated with construction of five intakes and intake pumping plants, one forebay, pipelines, canals, tunnel siphons, culvert siphons, and an intermediate pumping plant; alter nearby areas for retrieval of borrowed soils and spoils and RTM storage; and require development of transmission lines, access roads, and other incidental structures. This alternative would differ from Alternative 1A primarily in that it would use a series of canals generally along the east section of the Delta to convey water from north to south, rather than long segments of deep tunnel through the central part of the Delta.

### Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities

The regional economic effects on employment and income in the Delta region during construction were evaluated, both for the unlined and lined canal options. Changes are shown relative to the Existing Conditions and the No Action Alternative (regional economic conditions do not differ between Existing Conditions and No Action Alternative). The effects on employment and income for the unlined option are displayed in Table 16-25. The table shows the direct and total change that would result from conveyance-related spending. As evident in Table 16-25, spending on conveyance construction results in substantial, though temporary, local economic activity in the region. As shown, direct construction employment is anticipated to vary over the 8-year construction period, with an estimated 2,599 FTE jobs in the first year and 245 FTE jobs in the final year of the construction period. Construction employment is estimated to peak at 6,279 FTE jobs in year 4. Total employment (direct, indirect, and induced) would also peak in year 4, at 11,045 FTE jobs.
Table 16-25. Regional Economic Effects on Employment and Labor Income during Construction (Alternative 1B)

<table>
<thead>
<tr>
<th>Regional Economic Impact</th>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment (FTE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2,599</td>
<td>3,011</td>
<td>5,735</td>
<td>6,279</td>
<td>5,512</td>
<td>4,702</td>
<td>1,543</td>
<td>245</td>
<td>29,627</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total b</td>
<td>7,208</td>
<td>7,673</td>
<td>12,484</td>
<td>12,985</td>
<td>11,045</td>
<td>8,499</td>
<td>3,028</td>
<td>370</td>
<td>63,292</td>
<td></td>
</tr>
<tr>
<td>Labor Income (million $)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>132.6</td>
<td>129.3</td>
<td>169.2</td>
<td>160.2</td>
<td>127.9</td>
<td>75.8</td>
<td>33.5</td>
<td>1.3</td>
<td>829.8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total b</td>
<td>266.9</td>
<td>268.0</td>
<td>380.3</td>
<td>374.3</td>
<td>307.0</td>
<td>205.6</td>
<td>82.0</td>
<td>6.3</td>
<td>1,890.4</td>
<td></td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).

a IMPLAN results are changes relative to Existing Conditions or the No Action Alternative.
b Includes direct, indirect, and induced effects; numbers may not sum to the total due to rounding.
Detailed estimates are presented in Appendix 16A, *Regional Economic Impacts of Water Conveyance Facility Construction*.

The employment and income effects under the lined option would be higher than for the unlined option. Direct and total employment estimates over the 8-year construction period for the lined option would be 29,852 and 63,847, respectively. Direct and total income effects would be also higher under the lined option, with direct and total income over the construction period of $838.8 million and $1,909.3 million, respectively.

The footprint of conveyance and related facilities such as roads and utilities would remove some existing agricultural land from production, so the effects on employment and income from such removals would be negative. The regional economic effects on employment and income in the Delta region from the change in agricultural production are reported in Table 16-26. As shown, direct agricultural employment would be reduced by an estimated 90 FTE jobs, while total employment (direct, indirect, and induced) associated with agricultural employment would fall by 340 FTE jobs.

Mapbook Figures M14-3 and M14-4 display areas of Important Farmland and lands under Williamson Act contracts that could be converted to other uses due to the construction of water conveyance facilities for the East alignment. Note that not all of these structures would be constructed under this alternative.
Table 16-26. Regional Economic Effects on Agricultural Employment and Labor Income during Construction (Alternative 1B)

<table>
<thead>
<tr>
<th>Regional Economic Impact&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Impacts on Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment (FTE)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-90</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-340</td>
</tr>
<tr>
<td><strong>Labor Income (million $)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-11.4</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-21.9</td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).

<sup>a</sup> IMPLAN results are changes relative to Existing Conditions or the No Action Alternative.

<sup>b</sup> Includes direct, indirect, and induced effects.

Additionally, the Alternative 1B construction footprint would result in the abandonment of an estimated two producing natural gas wells in the study area, as described in Chapter 26, Mineral Resources, Section 26.3.3.3, Impact MIN-1. This could result in the loss of employment and labor income associated with monitoring and maintaining these wells. Generally, small crews perform ongoing monitoring and maintenance of several wells at a time. As shown in Chapter 26, Mineral Resources, Table 26-3, 516 active producer wells are located in the study area. Even if both producing wells in the Alternative 1B construction footprint were abandoned and not replaced with new wells installed outside the construction footprint, the percentage reduction in the number of natural gas wells would be very small. As a result, the employment and labor income effects associated with well abandonment, while negative, would be minimal.

**NEPA Effects:** Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would increase total employment and income in the Delta region. The change would result from expenditures on BDCP construction and from a modest decrease in agricultural production. Changes in recreational expenditures and natural gas well operations could also affect regional employment and income, but these have not been quantified. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.3, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.3.3, REC-1 through REC-4; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.3, Impact MIN-1. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not
constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

**Population**

Construction of conveyance facilities would require an estimated peak of 6,280 workers in year 4 of the assumed 8-year construction period. It is anticipated that many of these new jobs would be filled from within the existing five-county labor force.

Considering the multi-year duration of conveyance facility construction, it is anticipated that non-local workers would temporarily relocate to the five-county region, thus adding to the local population. As discussed in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.1, Direct Growth Inducement, an estimated 30 percent of workers could come from out of the Delta region, suggesting that approximately 1,900 workers could relocate to the Delta region at the peak of the construction period. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Changes in demand for public services resulting from any increase in population are addressed in Chapter 20, *Public Services and Utilities*, Section 20.3.3.3, Impact UT-1 through UT-6.

**Housing**

Changes in housing demand are based on changes in supply resulting from displacement during facilities construction and changes in housing demand resulting from employment associated with construction of conveyance facilities. As described in Chapter 13, *Land Use*, Section 13.3.3.3, Impact LU-2, construction of water conveyance facilities under Alternative 1B would conflict with approximately 109 residential structures.

The construction workforce would most likely commute daily to the work sites from within the five-county region; however, if needed, there are about 53,000 housing units available to accommodate workers who may choose to commute on a workweek basis or who may choose to temporarily relocate to the region for the duration of the construction period, including the estimated 1,900 workers who may temporarily relocate to the Delta region from out of the region. In addition to the available housing units, there are recreational vehicle parks and hotels and motels within the five-county region to accommodate any construction workers. As a result, and as discussed in more detail in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.1, Direct Growth Inducement, construction of the proposed conveyance facilities is not expected to substantially increase the demand for housing within the five-county region.

**NEPA Effects:** Within specific local communities, there could be localized effects on housing. However, given the availability of housing within the five-county region, predicting where this impact might fall would be speculative. In addition, new residents would likely be dispersed across the region, thereby not creating a burden on any one community.
Because these activities would not result in permanent concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population. Therefore, adverse physical changes resulting from the minor increase in population are not anticipated.

**Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 1B, effects on community character would be similar in nature, but not location or magnitude, to those described under Alternative 1A, Impact ECON-3. Under this alternative, regional population and employment would increase to levels described above under Impact ECON-1 and ECON-2. The geographic extent of these effects would also vary from that described for Alternative 1A, as the intensity of effects would be somewhat greater or lesser based on communities' ability to accommodate growth and proximity to features constructed for the water conveyance alignment under this alternative. Under this alternative, areas near the intake pumping plants in the vicinity of Clarksburg, Hood, and Courtland could experience the greatest changes in character, along with communities near the canal alignment like Thornton. Effects associated with construction activities could also result in changes to community cohesion if they were to restrict mobility, reduce opportunities for maintaining face-to-face relationships, or disrupt the functions of community organizations or community gathering places (such as schools, libraries, places of worship, and recreational facilities). Under Alternative 1B, several gathering places that lie in the vicinity of construction areas could be indirectly affected by noise and traffic associated with construction activities, including the Clarksburg Library, Clarksburg Fire Department, Delta High School, Holt Union Elementary School, Clarksburg Community Church, Community Baptist Church, and several marinas or other recreational facilities (see Chapter 15, *Recreation*, Table 15-13).

Additionally, as described in Chapter 20, *Public Services and Utilities*, a fire station in the community of Hood would be directly affected by construction of a canal segment under this alternative and accordingly, its function as a workplace and as a community gathering place may be relocated.

Like Alternative 1A, the anticipated economic shift away from agriculture and towards construction could result in demographic changes. In comparing the existing demographic composition of agricultural workers and construction laborers within the five-county Delta Region, men make up a large proportion of both occupations: 84 percent of agricultural workers were male, compared with 98 percent of construction laborers. Approximately 92 percent of agricultural workers made less than $35,000, while 60 percent of construction laborers made less than $35,000. Additionally, 87 percent of agricultural workers within the study area report Hispanic origin, while 54 percent of construction laborers claim Hispanic origin within the five-county area (U.S. Census Bureau 2012b).

Construction activities could be expected to bring about a decline in the rural qualities currently exhibited by Delta communities, while expansion of employment and population in the region could provide economic opportunities supportive of community stability. While water conveyance construction could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise as a result of declining economic stability in communities closest to construction effects and in those most heavily influenced by agricultural and recreational activities. These effects would be greatest during the eight-year construction period.

Implementation of mitigation measures and environmental commitments related to noise, visual
effects, transportation, agriculture, and recreation, would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-3.

CEQA Conclusion: Construction of water conveyance facilities under Alternative 1B could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-2 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment. However, implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan, and Coordinate with Mosquito Vector Control Districts and Prepare and Implement Mosquito Management Plans.

Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 1B, publicly-owned water conveyance facilities would be constructed on land of which some is currently held by private owners. Property tax and assessment revenue forgone as a result of water conveyance facilities is estimated at $25.6 million over the construction period. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the BDCP, such as reclamation districts where conveyance facilities and associated work areas are proposed. This economic effect would be considered adverse; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for constructing, locating, operating, or mitigating for new Delta water conveyance facilities. Additionally, as discussed under Impact ECON-1, construction of the water conveyance facilities would be anticipated to result in a net increase of income and employment in the Delta region. This would also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

CEQA Conclusion: Under Alternative 1B, construction of water conveyance facilities would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the construction period, property tax and assessment revenue forgone is estimated at $25.6 million. However, the Sacramento-San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.
Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 1B, disruption of recreational activities during the construction period would be similar in character to that described under Alternative 1A, Impact ECON-5. However, as described in Chapter 15, Recreation, Section 15.3.3.3, Impacts REC-1 through REC-4, the geographic incidence and extent of these effects would be different based on the construction of a different conveyance alignment composed of different features. Access to recreational facilities may be restricted throughout the construction period. Additionally, the quality of recreational activities including boating, fishing, waterfowl hunting, and hiking in the Delta could be indirectly affected by noise, lighting, traffic, and visual degradation in proximity to water conveyance construction. Under this alternative, 18 recreational sites or recreational areas would experience periods of construction-related effects, including noise, access, visual disturbances, or a combination of these effects. These include Clarksburg Marina, Clarksburg Boat Launch (fishing access), Stone Lakes National Wildlife Refuge, Cosumnes River Preserve, White Slough Wildlife Area – Pond 6, Woodbridge Ecological Reserve, The Reserve at Spanos Park Golf Course, Paradise Point Marina, Weber Point Yacht Club, Windmill Cove Resort & Marina, Buckley Cove (Marina West Yacht Club, Buckley Cove Boat Launch, River Point Landing Marina Resort, Ladd’s Marina, Stockton Sailing Club, and Buckley Cove Park), and Clifton Court Forebay. Construction activities associated with this alternative would affect more established recreational sites than under Alternative 1A.

Construction of water conveyance structures under this alternative would be anticipated to temporarily result in a lower-quality recreational experience in a number of localized areas throughout the Delta, despite the implementation of mitigation measures, including enhancement of fishing access sites and incorporation of recreational access into project design, and environmental and non-environmental commitments, including providing funding to implement recreational improvements and control aquatic weeds, providing notification of maintenance activities in waterways, and developing and implementing a noise abatement plan, as described in Appendix 3B, Environmental Commitments. With a decrease in recreational quality, the number of visits would be anticipated to decline, at least in areas closest to construction activities. The multi-year schedule and geographic scale of construction activities and the anticipated decline in recreational spending would be considered an adverse effect. The commitments and mitigation measure cited above would contribute to the reduction of this effect.

CEQA Conclusion: Construction of the proposed water conveyance facilities under Alternative 1B could impact recreational revenue in the Delta region if construction activities result in fewer visits to the area. Fewer visits would be anticipated to result in decreased economic activity related to recreational activities. This section considers only the economic effects of recreational changes brought about by construction of the proposed water conveyance facilities. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.3, REC-1 through REC-4.

Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of the Proposed Water Conveyance Facilities

Construction of conveyance facilities would convert land from existing agricultural uses to uses that include direct facility footprints, construction staging areas, borrow/spoils areas, RTM storage, temporary and permanent roads, and utilities. Agricultural land could also be affected by changes in water quality and other conditions that would affect crop productivity. These direct effects on
Changes in crop acreage were used to describe the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, Environmental Setting/Affected Environment. Table 16-27 summarizes the changes in acreage and value of agricultural production that would occur in the Delta region as a result of Alternative 1B construction. Changes are shown relative to the Existing Conditions and the No Action Alternative by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The table also includes a summary of changes in crop acreages that are reported in Appendix 14A, Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction.

Total value of irrigated crop production in the Delta would decline on average by $32.8 million per year during the construction period, with total irrigated crop acreage declining by about 19,460 acres. These estimates are not dependent on water year type.

Table 16-27. Crop Acres and Value of Agricultural Production in the Delta during Construction (Alternative 1B)

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 1B</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>464.1</td>
<td>-19.6</td>
</tr>
<tr>
<td>Grains</td>
<td>56.8</td>
<td>-1.8</td>
</tr>
<tr>
<td>Field crops</td>
<td>186.2</td>
<td>-4.9</td>
</tr>
<tr>
<td>Forage crops</td>
<td>106.2</td>
<td>-6.5</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>74.0</td>
<td>-3.2</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>41.0</td>
<td>-3.1</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>617.2</td>
<td>-32.8</td>
</tr>
<tr>
<td>Grains</td>
<td>23.6</td>
<td>-0.7</td>
</tr>
<tr>
<td>Field crops</td>
<td>110.9</td>
<td>-3.0</td>
</tr>
<tr>
<td>Forage crops</td>
<td>67.7</td>
<td>-5.4</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>257.5</td>
<td>-10.9</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>157.7</td>
<td>-12.8</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).

Alternative 1B may also affect production costs, investments in production facilities and standing orchards and vineyards, and salinity of agricultural water supply. Effects would be similar to those qualitatively described under Alternative 1A, Impact ECON-6. See Chapter 14, Agricultural Resources, Section 14.3.3.3, Impacts AG-1 and AG-2, for further discussion of indirect effects on agricultural resources.

NEPA Effects. Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.
**CEQA Conclusion:** Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.3, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

In the Delta region, ongoing operation and maintenance of BDCP facilities would result in increased expenditures relative to the Existing Conditions and the No Action Alternative (regional economic conditions do not differ across Existing Conditions and No Action Alternative). The increased expenditures are expected to result in a permanent increase in regional employment and income, including an estimated 204 direct and 294 total (direct, indirect, and induced) FTE jobs (Table 16-28). Since operation and maintenance expenditures for the unlined and lined options were not differentiated, the results summarized in this section are assumed to apply to both the unlined and lined options. Potential changes in the value of agricultural production result in changes to regional employment and income in the Delta region under Alternative 1B relative to the Existing Conditions and the No Action Alternative.

**Table 16-28. Regional Economic Effects on Employment and Labor Income during Operations and Maintenance (Alternative 1B)**

<table>
<thead>
<tr>
<th>Regional Economic Impact</th>
<th>Impacts from Operations and Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment (FTE)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>204</td>
</tr>
<tr>
<td>Totalb</td>
<td>294</td>
</tr>
<tr>
<td><strong>Labor Income (million $)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>12.6</td>
</tr>
<tr>
<td>Totalb</td>
<td>16.8</td>
</tr>
</tbody>
</table>

Note: Labor income is reported in 2011 dollars (U.S. Department of Commerce 2012).

\[a\] IMPLAN results are changes relative to Existing Conditions or the No Action Alternative.

\[b\] Includes direct, indirect, and induced effects.

The operation and maintenance of conveyance and related facilities such as roads and utilities would result in the permanent removal of agricultural land from production following construction, and the effects on employment and income would be negative, including the loss of an estimated 117 agricultural and 321 total (direct, indirect, and induced) FTE jobs. The regional economic effects on employment and income in the Delta region from the change in agricultural production are
reported in Table 16-29. Mapbook Figures M14-3 and M14-4 display areas of Important Farmland and lands under Williamson Act contracts that could be converted to other uses due to the construction of water conveyance facilities for the East alignment. Note that not all of these structures would be constructed under this alternative.

Table 16-29. Regional Economic Effects on Agricultural Employment and Labor Income during Operations and Maintenance (Alternative 1B)

<table>
<thead>
<tr>
<th>Regional Economic Impacta</th>
<th>Impacts on Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment (FTE)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-117</td>
</tr>
<tr>
<td>Totalb</td>
<td>-321</td>
</tr>
<tr>
<td>Labor Income (million $)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-9.3</td>
</tr>
<tr>
<td>Totalb</td>
<td>-17.9</td>
</tr>
</tbody>
</table>

Note: Labor income is reported in 2011 dollars (U.S. Department of Commerce 2012).

a IMPLAN results are changes relative to Existing Conditions or the No Action Alternative.

b Includes direct, indirect, and induced effects.

**NEPA Effects:** Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would decrease total employment and income in the Delta region. The change would result from expenditures on BDCP operation and maintenance, increasing employment, and from changes in agricultural production, decreasing employment. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.3, Impacts AG-3 and AG-4; changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.3.3, Impacts REC-5 through REC-8. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.
Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

Population

Operations and maintenance of conveyance facilities would require approximately 200 permanent new workers. Given the nature of those operation and maintenance jobs, the existing water conveyance facilities already in the five-county region, the large workforce in the region, and the large water agencies with headquarters in that region, it is anticipated that most of these new jobs would be filled from within the existing five-county labor force. However, operation and maintenance may require specialized worker skills not readily available in the local labor pool. As a result, it is anticipated that some specialized workers may be recruited from outside the five-county region.

It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Changes in demand for public services resulting from any increase in population are addressed in Chapter 20, Public Services and Utilities, Section 20.3.3.3, Impact UT-7.

Housing

It is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing. There are about 53,000 housing units available to accommodate any nonlocal workers who relocate to the five-county region. In addition, new residents would likely be dispersed across the region, thereby not creating a burden on any one community. As a result, operation and maintenance of the proposed conveyance facilities is not expected to increase the demand for housing.

NEPA Effects: Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

CEQA Conclusion: Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population. Therefore, the minor increase in population is not anticipated to result in any adverse changes to the physical environment.

Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Throughout the five-county Delta region, population and employment could slightly contract as a result of continued operation and maintenance of the water conveyance facilities under Alternative 1B. Agricultural contributions to the character and culture of the Delta would be likely to decline commensurate with the projected decline in agricultural-related employment and production, as discussed under Impact ECON-7. This could result in the closure of agriculture-dependent businesses or those catering to agricultural employees, particularly in areas where conversion of agricultural land would be most concentrated. Similar effects could accrue to areas disproportionately dependent upon existing recreational activities. However, influences associated with those hired to operate, repair, and maintain water conveyance structures would grow. To the extent that this anticipated economic shift away from agriculture results in demographic changes in
population, employment level, income, age, gender, or race, the study area would be expected to see changes to its character, particularly in those Delta communities most substantially affected by demographic changes based on their size or proximity to BDCP facilities.

While some of the rural qualities of Delta communities, including relatively low noise and traffic levels, could return to near pre-construction conditions during the operational phase, other effects would be lasting. For instance, the visual appearance of intakes and other permanent features would compromise the predominantly undeveloped and agricultural nature of communities like Clarksburg, Courtland, Hood, and Thornton, which are located closest to the proposed water conveyance features. Where BDCP operations make areas less desirable in which to live, work, shop, or participate in recreational activities, localized abandonment of buildings could result. Such lasting effects could also result in changes to community cohesion if they were to restrict mobility, reduce opportunities for maintaining face-to-face relationships, or disrupt the functions of community organizations or community gathering places (such as schools, libraries, places of worship, and recreational facilities).

Under Alternative 1B, adverse social effects could occur in communities closest to character-changing effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-9.

**CEQA Conclusion:** Operation and maintenance of water conveyance facilities under Alternative 1B could adversely affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, these impacts are described under Impact ECON-8 and in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

**Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 1B, publicly-owned water conveyance facilities would be located, operated, and maintained on land of which some is currently held by private owners. Property tax and assessment revenue forgone as a result of water conveyance facilities is estimated at $153.8 million over the BDCP’s 50-year permit period, or an average of $3.2 million annually. As described above, the annual property tax revenue of the Delta counties is more than $934 million (California State Controller’s Office 2012). Projected over the 50-year period, these removals would likely represent less than 1% of these counties’ property tax revenue. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the BDCP. Additionally, as discussed under Impact ECON-7, operation and maintenance of the water conveyance facilities would be anticipated to result in a net decrease of income and employment in the Delta region. This would also create an indirect effect through reduced sales tax revenue for local government entities. These economic effects would be considered adverse; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for constructing, locating, operating, or mitigating for new Delta water conveyance facilities.
**CEQA Conclusion:** Under Alternative 1B, the ongoing operation and maintenance of water conveyance facilities would restrict potential property tax revenue for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated at $153.8 million. Additionally, an anticipated decrease in sales tax revenue could also lead to revenue declines. However, new Delta conveyance facilities are required under the California Water Code to offset impacts on property taxes or assessments levied by local governments or special districts (Water Code 85089). CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** As discussed in Chapter 15, Recreation, Section 15.3.3.3, Impacts REC-5 through REC-8, operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 1B are anticipated to create minor effects on recreational resources. Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. As discussed in Impact REC-7, most intake maintenance, such as painting, cleaning, and repairs, would be done with barges and divers, and could cause a temporary impediment to boat movement in the Sacramento River in the immediate vicinity of the affected intake structure and reduce opportunities for waterskiing, wakeboarding, or tubing in the immediate vicinity of the intake structures. However, boat passage and navigation on the river would still be possible around any barges or other maintenance equipment and these effects would be expected to be short-term (2 years or less). Although water-based recreation (i.e. boating, waterskiing, wakeboarding, etc.) may be restricted at and in the vicinity of intakes, many miles of the Sacramento River would still be usable for these activities during periodic maintenance events. Additionally, implementation of the environmental commitment to provide notification of construction and maintenance activities in waterways (Appendix 3B, Environmental Commitments) would reduce these effects. Because effects of facility maintenance would be short-term and intermittent, substantial economic effects are not anticipated to result from operation and maintenance of the facilities.

**CEQA Conclusion:** Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 1B are anticipated to create minor effects on recreational resources and therefore, are not expected to significantly reduce economic activity related to recreational activities. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.3, Impacts REC-5 through REC-8.

**Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

During operation and maintenance of conveyance facilities existing agricultural land would be in uses that include direct facility footprints and associated permanent roads and utilities. Agricultural land could also be affected by changes in water quality and other conditions that would affect crop
productivity and crop choices. These direct effects on agricultural land are described in Chapter 14, Agricultural Resources, Section 14.3.3.3, Impacts AG-1 and AG-2.

Changes in crop acreage were used to estimate the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, Environmental Setting/Affected Environment. Table 16-30 summarizes the changes in acreage and value of agricultural production that would result in the Delta region from operation of Alternative 1B. Changes are shown relative to the Existing Conditions and the No Action Alternative by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The changes in crop acreages are reported in Appendix 14A, Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction.

Total value of irrigated crop production in the Delta region would decline on average by $29.2 million per year during operation and maintenance, with total irrigated crop acreage declining by about 17,700 acres. These estimates are not dependent on water year type.

Table 16-30. Crop Acres and Value of Agricultural Production in the Delta during Operations and Maintenance (Alternative 1B)

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 1B</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>466.0</td>
<td>-17.7</td>
</tr>
<tr>
<td>Grains</td>
<td>57.0</td>
<td>-1.6</td>
</tr>
<tr>
<td>Field crops</td>
<td>186.7</td>
<td>-4.4</td>
</tr>
<tr>
<td>Forage crops</td>
<td>106.7</td>
<td>-6.0</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>74.3</td>
<td>-2.9</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>41.3</td>
<td>-2.7</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>620.8</td>
<td>-29.2</td>
</tr>
<tr>
<td>Grains</td>
<td>23.6</td>
<td>-0.6</td>
</tr>
<tr>
<td>Field crops</td>
<td>111.1</td>
<td>-2.7</td>
</tr>
<tr>
<td>Forage crops</td>
<td>68.1</td>
<td>-5.0</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>258.6</td>
<td>-9.8</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>159.4</td>
<td>-11.1</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).

Alternative 1B may also affect production costs on lands even if gross revenues are largely unaffected. Increased costs could be associated with operational constraints and longer travel times due to permanent facilities. In most cases, affected lands fall within the facilities footprint, and are included in the agricultural acreage and value of production described elsewhere in this chapter and in Chapter 14, Agricultural Resources, Section 14.3.3.3.

Crop yields and crop selection on lands in the Delta could be affected by changes in salinity of agricultural water supply during operation and maintenance activities. If operation of the proposed conveyance facilities increases salinity in part of the Delta, crops that are more sensitive to salinity could shift to other lands in the five-county Delta region. See Chapter 14, Agricultural Resources, Section 14.3.3.3, Impact AG-2, for further discussion of effects from changes in salinity.
**NEPA Effects:** The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** During operation and maintenance of the proposed water conveyance facilities the value of agricultural production in the Delta region would be reduced. The permanent removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.3, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


**NEPA Effects:** Effects on regional economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-13 because the measures are similar. In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, implementation of these components are anticipated to result in the abandonment of natural gas wells, causing a decrease in employment and labor income associated with monitoring and maintaining wells, which would be considered an adverse effect. Mitigation Measure MIN-5, described in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5, would be available to reduce these effects by minimizing, to the extent feasible, the need for well abandonment or relocation.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production activities. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*. 

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Draft EIR/EIS
November 2013
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Impact ECON-14: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

**NEPA Effects:** Effects on population and housing as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-14 because the measures are similar. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired. Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes to the physical environment are not anticipated to result.

Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22

**NEPA Effects:** Effects on community character as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-15 because the conservation measures are similar. While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects, including effects on community cohesion, could also arise in those communities closest to character-changing effects and those most heavily influenced by agricultural activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, *Environmental Commitments*). These actions are summarized under Alternative 1A, Impact ECON-15.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 under Alternative 1B could affect community character within the Delta region. These activities could have adverse or beneficial effects with respect to community character. Because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character are related to physical impacts involving population growth, these impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.
Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Under Alternative 1B, effects on local government fiscal conditions as a result of conservation measure implementation would be similar to those described under Alternative 1A, Impact ECON-16. Conservation Measures 2–22 would remove some private land from local property tax and assessment rolls. This economic effect would be considered adverse; however, the BDCP proponents would offset forgone property tax and assessments levied by local governments and special districts on private lands converted to habitat.

CEQA Conclusion: Under Alternative 1B, implementation of Conservation Measures 2–22 would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated at $176.7 million, compared with annual property tax revenue of more than $934 million in the Delta counties (California State Controller's Office 2012). Projected over the 50-year period, these removals would likely represent less than 1% of these counties' property tax revenue. However, the BDCP proponents would compensate local governments and special districts for forgone revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131).

Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Effects related to implementation of the Conservation Measures 2–22 under this alternative would be similar to those described under Alternative 1A, Impact ECON-17. These measures may result in adverse and beneficial effects on recreational resources in the Delta region, resulting in the potential for decreased or increased economic activities related to recreation.

CEQA Conclusion: Implementation of conservation measures would limit opportunities for recreation and compromise the quality of activities, leading to potential economic impacts. However, implementation could also improve the quality of existing recreational opportunities, creating increased economic value with respect to recreation. This section considers only the economic effects of recreational changes brought about by conservation measure implementation. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.3, Impacts REC-9 through REC-11.

Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on agricultural economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-18 because the measures are similar. Conservation Measures 2–22 would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14, Agricultural Resources, Section 14.3.3.3, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents...
would provide compensation to property owners for losses due to implementation of the alternative.

**NEPA Effects:** Because implementation of Conservation Measures 2–22 would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.3, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1.

**Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions**

**NEPA Effects:** The socioeconomic effects associated with operation of Alternative 1B would be the same as those described under Alternative 1A, Impact ECON-19, because deliveries would be based on the same operational guidelines. Changes in deliveries to hydrologic regions could result in beneficial or adverse socioeconomic effects in these areas. In hydrologic regions where water deliveries are predicted to increase when compared with the No Action Alternative, more stable agricultural activities could support employment and economic production associated with agriculture. Where M&I deliveries increase, population growth could lead to general economic growth and support water-intensive industries. Such changes could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, growth associated with deliveries could require additional expenditures for local governments while also supporting increases in revenue.

**CEQA Conclusion:** Operation of water conveyance facilities under Alternative 1B could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.

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

Alternative 1C would result in effects on lands and communities in the study area associated with construction of five intakes and intake pumping plants, one forebay, conveyance pipelines, canals, a tunnel, culvert siphons, and an intermediate pumping plant. Nearby areas would be altered for the deposition of spoils. Transmission lines, access roads, and other incidental facilities would also be
needed for operation of the Alternative 1C facilities and construction of these structures would have
effects on lands and communities. This alternative would differ from Alternative 1A primarily in that
water would be carried south in a series of canals along the western side of the Delta to an
intermediate pumping plant and then pumped through a tunnel to a continuing canal to the
proposed Byron Tract Forebay, rather than long segments of deep pipeline and tunnel through the
central part of the Delta.

Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta
Region during Construction of the Proposed Water Conveyance Facilities

The regional economic effects on employment and income in the Delta region during
construction were evaluated for both the unlined and lined canal options. Changes are shown
relative to the Existing Conditions and the No Action Alternative (regional economic conditions
do not differ between Existing Conditions and No Action Alternative). The effects on
employment and income for the unlined option are displayed in Table 16-31. Table 16-31
shows the direct and total change that would result from conveyance-related spending. As
evident in Table 16-31, spending on conveyance construction results in substantial local
economic activity in the region. As shown, direct construction employment is anticipated to vary
over the 8-year construction period, with an estimated 2,747 FTE jobs in the first year and 236 FTE
jobs in the final year of the construction period. Construction employment is estimated to peak at
5,300 FTE jobs in year 4. Total employment (direct, indirect, and induced) would also peak in year 4,
at 11,559 FTE jobs.

Table 16-31. Regional Economic Effects on Employment and Labor Income during Construction
(Alternative 1C)

<table>
<thead>
<tr>
<th>Regional Economic Impacta</th>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment (FTE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td></td>
<td>2,747</td>
<td>3,016</td>
<td>4,915</td>
<td>5,300</td>
<td>4,794</td>
<td>4,194</td>
<td>1,128</td>
<td>236</td>
<td>26,329</td>
</tr>
<tr>
<td>Totalb</td>
<td></td>
<td>9,209</td>
<td>8,411</td>
<td>11,698</td>
<td>11,559</td>
<td>9,867</td>
<td>7,767</td>
<td>2,126</td>
<td>352</td>
<td>60,989</td>
</tr>
<tr>
<td>Labor Income (million $)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td></td>
<td>197.6</td>
<td>155.8</td>
<td>181.1</td>
<td>156.9</td>
<td>120.7</td>
<td>74.3</td>
<td>21.3</td>
<td>1.1</td>
<td>908.8</td>
</tr>
<tr>
<td>Totalb</td>
<td></td>
<td>379.1</td>
<td>312.7</td>
<td>386.9</td>
<td>352.5</td>
<td>283.0</td>
<td>194.8</td>
<td>54.6</td>
<td>5.8</td>
<td>1,969.4</td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).
a IMPLAN results are changes relative to Existing Condition or No Action Alternative.
b Includes direct, indirect, and induced effects; numbers may not sum to the total due to rounding.
Detailed estimates are presented in Appendix 16A, Regional Economic Impacts of Water
Conveyance Facility Construction.

The employment and income effects under the lined option are higher than for the unlined option.
Direct and total employment estimates over the 8-year construction period for the lined option are
29,019 and 62,693, respectively. Direct and total income effects are also higher under the lined
option, with direct and total income over the construction period of $936.3 million and $2,027.3
million, respectively.

The footprint of conveyance and related facilities such as roads and utilities would remove some
existing agricultural land from production, so the effects on employment and income from those
removals would be negative. The regional economic effects on employment and income in the Delta region from the change in agricultural production are reported in Table 16-32. As shown, direct agricultural employment would be reduced by an estimated 64 FTE jobs, while total employment (direct, indirect, and induced) associated with agricultural employment would fall by 240 FTE jobs. Mapbook Figures M14-5 and M14-6 display areas of Important Farmland and lands under Williamson Act contracts that could be converted to other uses due to the construction of water conveyance facilities for the West alignment. Note that not all of these structures would be constructed under this alternative.

**Table 16-32. Regional Economic Effects on Agricultural Employment and Labor Income, during Construction (Alternative 1C)**

<table>
<thead>
<tr>
<th>Regional Economic Impacta</th>
<th>Impacts on Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment (FTE)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-64</td>
</tr>
<tr>
<td>Totalb</td>
<td>-240</td>
</tr>
<tr>
<td><strong>Labor Income (million $)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-8.1</td>
</tr>
<tr>
<td>Totalb</td>
<td>-15.5</td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a IMSPLAN results are changes relative to Existing Condition or No Action Alternative.</td>
<td></td>
</tr>
<tr>
<td>b Includes direct, indirect, and induced effects.</td>
<td></td>
</tr>
</tbody>
</table>

Additionally, the Alternative 1C construction footprint would result in the abandonment of an estimated four producing natural gas wells in the study area, as described in Chapter 26, Mineral Resources, Section 26.3.3.4, Impact MIN-1. This could result in the loss of employment and labor income associated with monitoring and maintaining these wells. Generally, small crews perform ongoing monitoring and maintenance of several wells at a time. As shown in Chapter 26, Mineral Resources, Table 26-3, 516 active producer wells are located in the study area. Even if all four producing wells in the Alternative 1C construction footprint were abandoned and not replaced with new wells installed outside the construction footprint, the percentage reduction in the number of natural gas wells would be very small. As a result, the employment and labor income effects associated with well abandonment, while negative, would be minimal.

**NEPA Effects:** Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would increase total employment and income in the Delta region. The change would result from expenditures on construction, increasing employment, and from changes in agricultural production, decreasing employment. Changes in recreational expenditures and natural gas well operations could also affect regional employment and income, but these have not been quantified. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical
impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.4, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.3.4, REC-1 through REC-4; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.4, Impact MIN-1. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities

Population

Construction of conveyance facilities would require an estimated peak of 5,300 workers in year 4 of the assumed 8-year construction period. It is anticipated that many of these new jobs would be filled from within the existing five-county labor force.

Considering the multi-year duration of conveyance facility construction, it is anticipated that non-local workers would temporarily relocate to the five-county region, thus adding to the local population. As discussed in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.1, Direct Growth Inducement, an estimated 30 percent of workers could come from out of the Delta region, suggesting that approximately 1,300 workers could relocate to the Delta region at the peak of the construction period. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Changes in demand for public services resulting from any increase in population are addressed in Chapter 20, Public Services and Utilities, Section 20.3.3.4, Impact UT-1 through UT-6.

Housing

Changes in housing demand are based on changes in supply resulting from displacement during facilities construction and changes in housing demand resulting from employment associated with construction of conveyance facilities. As described in Chapter 13, Land Use, Section 13.3.3.4, Impact LU-2, construction of water conveyance facilities under Alternative 1C would conflict with approximately 194 residential structures.

The construction workforce would most likely commute daily to the work sites from within the five-county region; however, if needed, there are about 53,000 housing units available to accommodate workers who may choose to commute on a workweek basis or who may choose to temporarily relocate to the region for the duration of the construction period, including the estimated 1,300 workers who may temporarily relocate to the Delta region from out of the region. In addition to the available housing units, there are recreational vehicle parks within the five-county region to accommodate any construction workers. As a result, and as discussed in more detail in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.1, Direct Growth Inducement,
construction of the proposed conveyance facilities is not expected to substantially increase the
demand for housing within the five-county region.

**NEPA Effects:** Within specific local communities, there could be localized effects on housing.
However, given the availability of housing within the five-county region, predicting where this
impact might fall would be speculative. In addition, new residents would likely be dispersed across
the region, thereby not creating a burden on any one community.

Because these activities would not result in permanent concentrated, substantial increases in
population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would result in minor
population increases in the Delta region with adequate housing supply to accommodate the change
in population. Therefore adverse changes in the physical environment are not anticipated.

**Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed
Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 1C, effects on community character would be similar in nature, but
not location or magnitude, to those described under Alternative 1A, Impact ECON-3. Under this
alternative, regional population and employment would increase to levels described above under
Impact ECON-1 and ECON-2. The geographic extent of these effects would also vary from that
described for Alternative 1A, as the intensity of effects would be somewhat greater or lesser based
on communities’ ability to accommodate growth and proximity to features constructed for the water
conveyance alignment under this alternative. Under this alternative, areas near the intake pumping
plants in the vicinity of Clarksburg, Hood, and Courtland could experience the greatest changes in
character, along with communities near the canal alignment like Knightsen, Discovery Bay, Bethel
Island, and Byron. Effects associated with construction activities could also result in changes to
community cohesion if they were to restrict mobility, reduce opportunities for maintaining face-to-
face relationships, or disrupt the functions of community organizations or community gathering
places (such as schools, libraries, places of worship, and recreational facilities). Under Alternative
1C, several gathering places that lie in the vicinity of construction areas could be indirectly affected
by noise and traffic associated with construction activities, including the Clarksburg Library, Delta
High School, Excelsior School, Knightsen Elementary School, Timber Point School, YMCA Childcare at
Timber Point, Byron Brentwood Cemetery, Bethel Island Baptist Church, Clarksburg Community
Church, Resurrection Life Community Church, Son Rise Family Fellowship, Citizen Land Alliance,
Bethel Island Chamber of Commerce, Discovery Bay Chamber of Commerce, Clarksburg Fire
Department, Courtland Fire Department, Knightsen Fire Department, and several marinas or other
recreational facilities (see Chapter 15, *Recreation*, Table 15-14).

Like Alternative 1A, the anticipated economic shift away from agriculture and towards construction
could result in demographic changes. In comparing the existing demographic composition of
agricultural workers and construction laborers within the five-county Delta Region, men make up a
large proportion of both occupations: 84 percent of agricultural workers were male, compared with
98 percent of construction laborers. Approximately 92 percent of agricultural workers made less
than $35,000, while 60 percent of construction laborers made less than $35,000. Additionally, 87
percent of agricultural workers within the study area report Hispanic origin, while 54 percent of
construction laborers claim Hispanic origin within the five-county area (U.S. Census Bureau 2012b).
Construction activities could be expected to bring about a decline in the rural qualities currently exhibited by Delta communities, while expansion of employment and population in the region could provide economic opportunities supportive of community stability. While water conveyance construction could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise as a result of declining economic stability in communities closest to construction effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-3.

**CEQA Conclusion:** Construction of water conveyance facilities under Alternative 1C could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-2 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment. However, implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito Management Plans.

**Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 1C, publicly-owned water conveyance facilities would be constructed on land of which some is currently held by private owners. Property tax and assessment revenue forgone as a result of water conveyance facilities is estimated at $20.2 million over the construction period. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the BDCP, such as reclamation districts where conveyance facilities and associated work areas are proposed. This economic effect would be considered adverse; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for constructing, locating, operating, or mitigating for new Delta water conveyance facilities. Additionally, as discussed under Impact ECON-1, construction of the water conveyance facilities would be anticipated to result in a net increase of income and employment in the Delta region. This would also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Under Alternative 1C, construction of water conveyance facilities would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the construction period, property tax and assessment revenue forgone is estimated at $20.2 million, compared with annual property tax revenue of more than $934 million in the Delta counties (California State Controller’s Office 2012). Projected over the 50-year period, these
removals would likely represent less than 0.1% of these counties' property tax revenue. However, the Sacramento-San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 1C, disruption of recreational activities during the construction period would be similar in character to that described under Alternative 1A, Impact ECON-5. However, as described in Chapter 15, Recreation, Section 15.3.3.4, Impacts REC-1 through REC-4, the geographic incidence and extent of these effects would be different based on the construction of a different conveyance alignment composed of different features. Access to recreational facilities may be restricted throughout the construction period. Additionally, the quality of recreational activities including boating, fishing, waterfowl hunting, and hiking in the Delta could be indirectly affected by noise, lighting, traffic, and visual degradation in proximity to water conveyance construction. Under this alternative, 11 recreational sites or recreational areas would experience periods of construction-related effects, including noise, access, visual disturbances, or a combination of these effects. These include Clarksburg Boat Launch (fishing access), Arrowhead Harbor Marina, Miner Slough Wildlife Area, Hidden Harbor Marina, Delta Protection lands, Twitchell Island, Franks Tract State Recreation Area, Sycamore Drive Park and Lakewood Drive Community Parks, Clifton Court Forebay, and Lazy M Marina. Construction activities associated with this alternative would affect fewer established recreational sites than under Alternative 1B but more than under Alternative 1A.

Construction of water conveyance structures under this alternative would be anticipated to result in a lower-quality recreational experience in a number of localized areas throughout the Delta, despite the implementation of mitigation measures, including enhancement of fishing access sites and incorporation of recreational access into project design, and environmental and non-environmental commitments, including providing funding to implement recreational improvements and control aquatic weeds, providing notification of maintenance activities in waterways, and developing and implementing a noise abatement plan, as described in Appendix 3B, Environmental Commitments. With a decrease in recreational quality, the number of visits would be anticipated to decline, at least in areas closest to construction activities. The multi-year schedule and geographic scale of construction activities and the anticipated decline in recreational spending would be considered an adverse effect. The commitments and mitigation measure cited above would contribute to the reduction of this effect.

CEQA Conclusion: Construction of the proposed water conveyance facilities under Alternative 1C could impact recreational revenue in the Delta region if construction activities result in fewer visits to the area. Fewer visits would be anticipated to result in decreased economic activity related to recreational activities. This section considers only the economic effects of recreational changes brought about by construction of the proposed water conveyance facilities. Potential physical
changes to the environment relating to recreational resources are described and evaluated in Chapter 15, *Recreation,* Section 15.3.3.4, REC-1 through REC-4.

**Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Construction of conveyance facilities would convert land from existing agricultural uses to uses that include direct facility footprints, construction staging areas, borrow/spoils areas, RTM storage, temporary and permanent roads, and utilities. Agricultural land could also be affected by changes in water quality and other conditions that would affect crop productivity. These direct effects on agricultural land are described in Chapter 14, *Agricultural Resources,* Section 14.3.3.4, Impacts AG-1 and AG-2.

Changes in crop acreage were used to describe the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, *Environmental Setting/Affected Environment.* Table 16-33 summarizes the changes in acreage and value of agricultural production that would result in the Delta region as a result of Alternative 1C construction. Changes are shown relative to the Existing Conditions and the No Action Alternative by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The table also includes a summary of changes in crop acreages that are reported in greater detail in Appendix 14A, *Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction.*

Total value of irrigated crop production in the Delta would decline on average by $22.2 million per year during the construction period, with total irrigated crop acreage declining by about 14,300 acres. These estimates are not dependent on water year type.

**Table 16-33. Crop Acres and Value of Agricultural Production in the Delta during Construction (Alternative 1C)**

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 1C</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>469.4</td>
<td>-14.3</td>
</tr>
<tr>
<td>Grains</td>
<td>56.8</td>
<td>-1.9</td>
</tr>
<tr>
<td>Field crops</td>
<td>187.1</td>
<td>-4.0</td>
</tr>
<tr>
<td>Forage crops</td>
<td>108.6</td>
<td>-4.1</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>75.9</td>
<td>-1.3</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>41.0</td>
<td>-3.1</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>627.8</td>
<td>-22.2</td>
</tr>
<tr>
<td>Grains</td>
<td>23.6</td>
<td>-0.6</td>
</tr>
<tr>
<td>Field crops</td>
<td>111.7</td>
<td>-2.1</td>
</tr>
<tr>
<td>Forage crops</td>
<td>70.6</td>
<td>-2.5</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>264.7</td>
<td>-3.7</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>157.2</td>
<td>-13.4</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).
Alternative 1C may also affect production costs, investments in production facilities and standing orchards and vineyards, and salinity of agricultural water supply. Effects would be similar to those qualitatively described under Alternative 1A, Impact ECON-6. See Chapter 14, Agricultural Resources, Section 14.3.3.4, Impacts AG-1 and AG-2, for further discussion of indirect effects on agriculture.

**NEPA Effects:** Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.4, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

In the Delta region, ongoing operation and maintenance of BDCP facilities would result in increased expenditures relative to the Existing Conditions and the No Action Alternative (regional economic conditions do not differ across Existing Conditions and No Action Alternative). The increased expenditures are expected to result in a permanent increase in regional employment and income, including an estimated 187 direct and 269 total (direct, indirect, and induced) FTE jobs (Table 16-34). Since operation and maintenance expenditures for the unlined and lined options were not differentiated, the results summarized in this section are assumed to apply to both the unlined and lined option. Potential changes in the value of agricultural production result in changes to regional employment and income in the Delta region under the Alternative 1C relative to the Existing Conditions and the No Action Alternative.
Table 16-34. Regional Economic Effects on Employment and Labor Income during Operations and Maintenance (Alternative 1C)

<table>
<thead>
<tr>
<th>Regional Economic Impact</th>
<th>Impacts from Operations and Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment (FTE)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>187</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>269</td>
</tr>
<tr>
<td>Labor Income (million $)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>11.4</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>15.3</td>
</tr>
</tbody>
</table>

<sup>a</sup> IMPLAN results are changes relative to Existing Condition or No Action Alternative.

<sup>b</sup> Includes direct, indirect, and induced effects.

Note: Labor income is reported in 2011 dollars (U.S. Department of Commerce 2012).

The operation and maintenance of conveyance and related facilities such as roads and utilities would result in the permanent removal of agricultural land from production following construction, and the effects on employment and income would be negative, including the loss of an estimated 75 agricultural and 216 total (direct, indirect, and induced) FTE jobs. The regional economic effects on employment and income in the Delta region from the change in agricultural production are reported in Table 16-35. Mapbook Figures M14-5 and M14-6 display areas of Important Farmland and lands under Williamson Act contracts that could be converted to other uses due to the construction of water conveyance facilities for the West alignment. Note that not all of these structures would be constructed under this alternative.

Table 16-35. Regional Economic Effects on Agricultural Employment and Labor Income during Operations and Maintenance (Alternative 1C)

<table>
<thead>
<tr>
<th>Regional Economic Impact</th>
<th>Impacts on Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment (FTE)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-75</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-216</td>
</tr>
<tr>
<td>Labor Income (million $)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-6.5</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-12.4</td>
</tr>
</tbody>
</table>

<sup>a</sup> IMPLAN results are changes relative to Existing Condition or No Action Alternative.

<sup>b</sup> Includes direct, indirect, and induced effects.

Note: Labor income is reported in 2011 dollars (U.S. Department of Commerce 2012).

**NEPA Effects:** Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.
**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would increase total employment and income in the Delta region. The change would result from expenditures on operation and maintenance and from changes in agricultural production. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.4, Impacts AG-3 and AG-4; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.4, Impacts REC-5 through REC-8. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**Population**

Operations and maintenance of conveyance facilities would require approximately 190 permanent new workers. Given the nature of those operation and maintenance jobs, the existing water conveyance facilities already in the five-county region, the large workforce in the region, and the large water agencies with headquarters in that region, it is anticipated that most of these new jobs would be filled from within the existing five-county labor force. However, operation and maintenance may require specialized worker skills not readily available in the local labor pool. As a result, it is anticipated that some specialized workers may be recruited from outside the five-county region.

It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Changes in demand for public services resulting from any increase in population are addressed in Chapter 20, *Public Services and Utilities*, Section 20.3.3.4, Impact UT-7.

**Housing**

It is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing. There are about 53,000 housing units available to accommodate any nonlocal workers who relocate to the five-county region. In addition, new residents would likely be dispersed across the region, thereby not creating a burden on any one community. As a result, operation and maintenance of the proposed conveyance facilities is not expected to increase the demand for housing.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.
**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population. The minor increase in population is not anticipated to result in any adverse changes to the physical environment.

**Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Throughout the five-county Delta region, population and employment could slightly expand due to continued operation and maintenance of the water conveyance facilities under Alternative 1C. Agricultural contributions to the character and culture of the Delta would be likely to decline commensurate with the projected decline in agricultural-related employment and production, as discussed under Impact ECON-7. This could result in the closure of agriculture-dependent businesses or those catering to agricultural employees, particularly in areas where conversion of agricultural land would be most concentrated. Similar effects could accrue to areas disproportionately dependent upon existing recreational activities. However, influences associated with those hired to operate, repair, and maintain water conveyance structures would grow. To the extent that this anticipated economic shift away from agriculture results in demographic changes in population, employment level, income, age, gender, or race, the study area would be expected to see changes to its character, particularly in those Delta communities most substantially affected by demographic changes based on their size or proximity to BDCP facilities.

While some of the rural qualities of Delta communities, including relatively low noise and traffic levels, could return to near pre-construction conditions during the operational phase, other effects would be lasting. For instance, the visual appearance of intakes and other permanent features would compromise the predominantly undeveloped and agricultural nature of communities like Clarksburg, Courtland, Hood, Knightsen, Discovery Bay, and Byron, which are closest to the permanent surface water conveyance features. Where BDCP operations make areas less desirable in which to live, work, shop, or participate in recreational activities, localized abandonment of buildings could result. Such lasting effects could also result in changes to community cohesion if they were to restrict mobility, reduce opportunities for maintaining face-to-face relationships, or disrupt the functions of community organizations or community gathering places (such as schools, libraries, places of worship, and recreational facilities).

While ongoing operations could result in beneficial effects relating to the economic welfare of a community under Alternative 1C, adverse social effects could also arise, particularly in communities closest to character-changing effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, *Environmental Commitments*). These actions are summarized under Alternative 1A, Impact ECON-9.

**CEQA Conclusion:** Operation and maintenance of water conveyance facilities under Alternative 1C could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, these impacts are described under Impact ECON-8 and in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment could
result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

**Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 1C, publicly-owned water conveyance facilities would be located, operated, and maintained on land of which some is currently held by private owners. Property tax and assessment revenue forgone as a result of water conveyance facilities is estimated at $121.2 million over the BDCP’s 50-year permit period, or an average of $2.4 million annually, compared with annual property tax revenue of more than $934 million in the Delta counties (California State Controller’s Office 2012). Projected over the 50-year period, these removals would likely represent less than 1% of these counties’ property tax revenue. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the BDCP. This economic effect would be considered adverse; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for constructing, locating, operating, or mitigating for new Delta water conveyance facilities. Additionally, as discussed under Impact ECON-7, operation and maintenance of the water conveyance facilities may result in a net increase of income and employment in the Delta region. This could also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Under Alternative 1C, the ongoing operation and maintenance of water conveyance facilities would restrict potential property tax revenue for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated at $121.2 million. However, the Sacramento-San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses may be offset, at least in part, by an increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** As discussed in Chapter 15, Recreation, Section 15.3.3.4, Impacts REC-5 through REC-8, operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 1C are anticipated to create minor effects on recreational resources. Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. As discussed in Impact REC-7, most intake maintenance, such as painting, cleaning, and repairs, would be done with barges and divers, and could cause a temporary impediment to boat movement in the Sacramento River in the immediate vicinity of the affected intake structure and reduce opportunities for waterskiing, wakeboarding, or tubing in the immediate vicinity of the intake structures. However, boat passage and navigation on the river would still be possible around any barges or other maintenance
equipment and these effects would be expected to be short-term (2 years or less). Although water-based recreation (i.e. boating, waterskiing, wakeboarding, etc.) may be restricted at and in the vicinity of intakes, many miles of the Sacramento River would still be usable for these activities during periodic maintenance events. Additionally, implementation of the environmental commitment to provide notification of construction and maintenance activities in waterways (Appendix 3B, Environmental Commitments) would reduce these effects. Because effects of facility maintenance would be short-term and intermittent, substantial economic effects are not anticipated to result from operation and maintenance of the facilities.

**CEQA Conclusion:** Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 1C are anticipated to create minor effects on recreational resources and therefore, are not expected to substantially reduce economic activity related to recreational activities. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, *Recreation*, Section 15.3.3.4, Impacts REC-5 through REC-8.

**Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

During operation and maintenance of conveyance facilities existing agricultural land would be in uses that include direct facility footprints and associated permanent roads and utilities. Agricultural land could also be affected by changes in water quality and other conditions that would affect crop productivity. These direct effects on agricultural land are described in Chapter 14, *Agricultural Resources*, Section 14.3.3.4, Impacts AG-1 and AG-2.

Changes in crop acreage were used to estimate the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, Environmental Setting/Affected Environment. Table 16-36 summarizes the changes in acreage and value of agricultural production that would result in the Delta region during operation of Alternative 1C. Changes are shown relative to the Existing Conditions and the No Action Alternative by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The changes in crop acreages are reported in greater detail in Appendix 14A, *Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction*.

Total value of irrigated crop production in the Delta region would decline on average by $17.7 million per year during operation and maintenance, with total irrigated crop acreage declining by about 11,700 acres. These estimates are not dependent on water year type.
Table 16-36. Crop Acres and Value of Agricultural Production in the Delta during Operations and Maintenance (Alternative 1C)

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 1C</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>472.0</td>
<td>-11.7</td>
</tr>
<tr>
<td>Grains</td>
<td>57.0</td>
<td>-1.6</td>
</tr>
<tr>
<td>Field crops</td>
<td>187.6</td>
<td>-3.5</td>
</tr>
<tr>
<td>Forage crops</td>
<td>109.6</td>
<td>-3.1</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>76.1</td>
<td>-1.0</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>41.6</td>
<td>-2.4</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>632.4</td>
<td>-17.7</td>
</tr>
<tr>
<td>Grains</td>
<td>23.7</td>
<td>-0.5</td>
</tr>
<tr>
<td>Field crops</td>
<td>112.0</td>
<td>-1.9</td>
</tr>
<tr>
<td>Forage crops</td>
<td>71.1</td>
<td>-2.0</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>265.4</td>
<td>-3.0</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>160.2</td>
<td>-10.3</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).

Alternative 1C may also affect production costs on lands even if gross revenues are largely unaffected. Increased costs could be associated with operational constraints and longer travel times due to permanent facilities. In most cases, affected lands fall within the facilities footprint, and are included in the agricultural acreage and value of production described elsewhere in this Chapter and in Chapter 14, Agricultural Resources, Section 14.3.3.4.

Crop yields and crop selection on lands in the Delta could be affected by changes in salinity of agricultural water supply during operation and maintenance activities. If operation of the proposed conveyance facilities increases salinity in part of the Delta, crops that are more sensitive to salinity could shift to other lands in the five-county Delta region. See Chapter 14, Agricultural Resources, Section 14.3.3.4, Impact AG-2, for further discussion of effects from changes in salinity.

**NEPA Effects:** The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, on 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** During operation and maintenance of the proposed water conveyance facilities the value of agricultural production in the Delta region would be reduced. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.4, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical effect. Measures to reduce these impacts are...
discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


*NEPA Effects:* Effects on regional economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-13 because the measures are similar. In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, implementation of these components are anticipated to result in the abandonment of natural gas wells, causing a decrease in employment and labor income associated with monitoring and maintaining wells, which would be considered an adverse effect. Mitigation Measure MIN-5, described in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5, would be available to reduce these effects by minimizing, to the extent feasible, the need for well abandonment or relocation.

*CEQA Conclusion:* Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production activities. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impacts AG-3 and AG-4; changes in recreation-related activities are addressed in Chapter 15, Recreation, Section 15.3.3.2, Impacts REC-9 through REC-11; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5.

**Impact ECON-14: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22**

*NEPA Effects:* Effects on population and housing as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-14 because the measures are similar. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired. Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.
CEQA Conclusion: Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes to the physical environment are not anticipated to result.

Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Effects on community character as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-15 because the measures are similar. While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects, including effects on community cohesion, could also arise in those communities closest to character-changing effects and those most heavily influenced by agricultural activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-15.

CEQA Conclusion: Implementation of Conservation Measures 2–22 under Alternative 1C could affect community character within the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character are related to physical impacts involving population growth, these impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Under Alternative 1C, effects on local government fiscal conditions as a result of conservation measure implementation would be similar to those described under Alternative 1A, Impact ECON-16. Conservation Measures 2–22 would remove some private land from local property tax and assessment rolls. This economic effect would be considered adverse; the BDCP proponents would offset forgone property tax and assessments levied by local governments and special districts on private lands converted to habitat.

CEQA Conclusion: Under Alternative 1C, implementation of Conservation Measures 2–22 would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated at $176.7 million, compared with annual property tax revenue of more than $934 million in the Delta counties (California State Controller’s Office 2012). Projected over the 50-year period, these removals would likely represent less than 1% of these counties’ property tax revenue. However, the BDCP proponents would compensate local governments and special districts for forgone revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes. If an alternative is not anticipated to result in a physical change to
the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131)

**Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the Proposed Conservation Measures 2–22**

**NEPA Effects:** Effects related to implementation of the Conservation Measures 2–22 under this alternative would be similar to those described under Alternative 1A, Impact ECON-17. These measures may result in adverse and beneficial effects on recreational resources in the Delta region, resulting in the potential for decreased or increased economic activities related to recreation.

**CEQA Conclusion:** Implementation of conservation measures would limit opportunities for recreation and compromise the quality of activities, leading to potential economic impacts. However, over time, implementation could also improve the quality of existing recreational opportunities, creating increased economic value with respect to recreation. This section considers only the economic effects of recreational changes brought about by conservation measure implementation. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, *Recreation*, Section 15.3.3.4, Impacts REC-9 through REC-11.

**Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22**

Effects on agricultural economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-18 because the measures are similar. Conservation Measures 2–22 would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14, *Agricultural Resources*, Section 14.3.3.4, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents would provide compensation to property owners for losses due to implementation of the alternative.

**NEPA Effects:** Because implementation of Conservation Measures 2–22 would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.4, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not
constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1.

**Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions**

**NEPA Effects:** The socioeconomic effects associated with operation of Alternative 1C would be the same as those described under Alternative 1A, Impact ECON-19, because deliveries would be based on the same operational guidelines. Changes in deliveries to hydrologic regions could result in beneficial or adverse socioeconomic effects in these areas. In hydrologic regions where water deliveries are predicted to increase when compared with the No Action Alternative, more stable agricultural activities could support employment and economic production associated with agriculture. Where M&I deliveries increase, population growth could lead to general economic growth and support water-intensive industries. Such changes could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, growth associated with deliveries could require additional expenditures for local governments while also supporting increases in revenue.

**CEQA Conclusion:** Operation of water conveyance facilities under Alternative 1C could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.

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

Facilities construction under Alternative 2A would be almost identical to those described for Alternative 1A. Alternative 2A could involve relocation of two of the intakes to a site south of the confluence of Sutter and Steamboat Sloughs and the Sacramento River. Additionally, under Alternative 2A, an operable barrier would be constructed at the Head of Old River. Operations would be different under Alternative 2A than under Alternative 1A.

**Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Temporary effects on regional economics during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-1. As shown in Table 16-19, over the construction period, regional effects of construction activities would result in direct employment of more than 21,000 FTE, with total employment effects in excess of 65,000 FTE. Increases in labor income associated with this employment would also be expected. Declines in agricultural production would be expected to lead to a decrease in employment of 27 FTE, with total effects leading to a decline of 100 FTE. Similarly, labor income related to these positions would decline, as shown in Table 16-20.

**NEPA Effects:** Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure
AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would increase total employment and income in the Delta region, temporarily. The increase in employment and income that would result from expenditures on construction would be greater than the reduction in employment and income attributable to losses in agricultural production. Changes in recreational expenditures and natural gas well operations could also affect regional employment and income, but these have not been quantified. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.5, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.5, REC-1 through REC-4; abandonment of natural gas wells is addressed in Chapter 26, *Mineral Resources*, Section 26.3.3.5, Impact MIN-1. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Effects on population and housing during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-2. It is anticipated that non-local workers would temporarily relocate to the Delta region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Within specific local communities, there could be localized effects on housing. However, given the availability of housing within the five-county region, predicting where this impact might fall would be speculative. In addition, new residents would likely be dispersed across the region, thereby not creating a burden on any one community.

**NEPA Effects:** Because these activities would not result in permanent concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would result in minor temporary population increases in the Delta region, which has an adequate housing supply to accommodate the change in population. Therefore, adverse physical changes resulting from the minor increase in population are not anticipated.
Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed Water Conveyance Facilities

**NEPA Effects:** Under Alternative 2A, effects on community character would be similar in nature, location, and magnitude to those described under Alternative 1A, Impact ECON-3. Variations in the location of effects would result from the potential construction of Intakes 6 and 7 rather than Intakes 4 and 5 and the construction of an operable barrier at the Head of Old River. While water conveyance construction could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise as a result of declining economic stability or changes in community cohesion in communities closest to construction effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-3.

**CEQA Conclusion:** Construction of water conveyance facilities under Alternative 2C could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-2 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment. However, implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito Management Plans.

Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities

**NEPA Effects:** Effects on tax revenue as a result of water conveyance construction under Alternative 2A would be similar to those described under Alternative 1A, Impact ECON-4. While this economic effect would be considered adverse, BDCP proponents would compensate local governments for the loss of property tax or assessment revenue associated with construction of water conveyance facilities. Additionally, local entities could benefit from an increase in sales tax revenue.

**CEQA Conclusion:** Construction of water conveyance facilities for Alternative 2A would result in the removal of a portion of the property tax base for various local government entities in the Delta region. However, entities receiving water from the State Water Project and federal Central Valley Project would mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines...
Socioeconomics

Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 2A, disruption of recreational activities during the construction period would be similar in character and magnitude to that described under Alternative 1A, Impact ECON-5. While access to recreational facilities would be maintained throughout construction, the quality of recreational activities including boating, fishing, waterfowl hunting, and hiking in the Delta could be indirectly affected by noise, lighting, traffic, and visual degradation in proximity to water conveyance construction.

Construction of water conveyance structures under this alternative would be anticipated to result in a lower-quality recreational experience in a number of localized areas throughout the Delta, despite the implementation of mitigation measures, including enhancement of fishing access sites and incorporation of recreational access into project design, and environmental and non-environmental commitments, including providing funding to implement recreational improvements and control aquatic weeds, providing notification of maintenance activities in waterways, and developing and implementing a noise abatement plan, as described in Appendix 3B, Environmental Commitments. With a decrease in recreational quality, the number of visits would be anticipated to decline, at least in areas close to construction activities. The multi-year schedule and geographic scale of construction activities and the anticipated decline in recreational spending would be considered an adverse effect. The commitments and mitigation measure cited above would contribute to the reduction of this effect.

CEQA Conclusion: Construction of the proposed water conveyance facilities under Alternative 2A could impact recreational revenue in the Delta region if construction activities result in fewer visits to the area. Fewer visits would be anticipated to result in decreased economic activity related to recreational activities. This section considers only the economic effects of recreational changes brought about by construction of the proposed water conveyance facilities. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.5, Impacts REC-1 through REC-4.

Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of the Proposed Water Conveyance Facilities

Effects on agricultural economics during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-6. Total value of irrigated crop production in the Delta would decline on average by $8.9 million per year during the 8 year construction period, with total irrigated crop acreage declining by about 5,600 acres. Alternative 2A may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints and longer travel times due to facilities construction. Additionally, loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction.

NEPA Effects: Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural...
Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.5, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on regional economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-7. Increased expenditures related to operation and maintenance of water conveyance facilities would be expected to result in a permanent increase in regional employment and income, as presented in Table 16-22. The permanent removal of agricultural land following construction would have lasting negative effects on agricultural employment and income, as shown in Table 16-23.

**NEPA Effects:** Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would increase total employment and income in the Delta region. The net change would result from expenditures on operation and maintenance and from changes in agricultural production. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.5, Impacts AG-3 and AG-4; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.5, Impacts REC-5 through REC-8. When required, DWR would provide compensation to landowners as a result of acquiring lands for the proposed conveyance facilities. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact
AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on population and housing during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-8. It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. It is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population and therefore adverse changes in the physical environment are not anticipated.

**Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 2A, effects on community character would be similar in nature, location, and magnitude to those described under Alternative 1A, Impact ECON-9. Variations in the location of effects would result from the potential operation and maintenance of Intakes 6 and 7 rather than Intakes 4 and 5 and the operation of an operable barrier at the Head of Old River. While water conveyance operation and maintenance could result in beneficial effects relating to the economic welfare of a community, lasting adverse social effects, including effects on community cohesion, could also arise in communities closest to physical features and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-9.

**CEQA Conclusion:** Operation and maintenance of water conveyance facilities under Alternative 2A could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-8 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.
Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Effects on tax revenue as a result of ongoing water conveyance operation and maintenance under Alternative 2A would be similar to those described under Alternative 1A, Impact ECON-10. While this economic effect would be considered adverse, BDCP proponents would compensate local governments for the loss of property tax or assessment revenue associated with construction of water conveyance facilities. Additionally, local entities could benefit from an increase in sales tax revenue.

CEQA Conclusion: Continued operation and maintenance of water conveyance facilities for Alternative 2A would result in the removal of a portion of the property tax base for various local government entities in the Delta region. However, entities receiving water from the State Water Project and federal Central Valley Project would mitigate for lost property tax and assessment revenue associated with the siting of conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Effects on recreation economics during operation and maintenance of the proposed water conveyance facilities under Alternative 2A would be similar to those described under Alternative 1A, Impact ECON-11. Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. Because effects of facility maintenance would be short-term and intermittent, substantial economic effects are not anticipated to result from operation and maintenance of the facilities.

CEQA Conclusion: Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 2A are anticipated to create minor effects on recreational resources and therefore, are not expected to substantially reduce economic activity related to recreational activities. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.5, Impacts REC-5 through REC-8.

Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

Permanent effects on agricultural economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-12. Total value of irrigated crop production in the Delta would decline on average by $7.4 million per year during operation and maintenance, with total irrigated crop acreage declining by about 4,400 acres. Alternative 2A may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints, changes in water quality, and longer travel times due to the permanent footprint of facilities. Additionally, loss of investments...
in production facilities and standing orchards and vineyards would occur as a result of facilities construction.

**NEPA Effects:** The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-2, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** During operation and maintenance of the proposed water conveyance facilities, the value of agricultural production in the Delta region would be reduced. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.5, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-2, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


**NEPA Effects:** Effects on regional economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-13. In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect.

Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-2, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, implementation of these components are anticipated to result in the abandonment of natural gas wells, causing a decrease in employment and labor income associated with monitoring and maintaining wells, which would be considered an adverse effect.

Mitigation Measure MIN-5, described in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5, would be available to reduce these effects by minimizing, to the extent feasible, the need for well abandonment or relocation.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production activities. The total change in employment and income is not, in itself, considered an
environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impacts AG-3 and AG-4; changes in recreation-related activities are addressed in Chapter 15, Recreation, Section 15.3.3.2, Impacts REC-9 through REC-11; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5.

Impact ECON-14: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on population and housing as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-14. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired.

NEPA Effects: Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

CEQA Conclusion: Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes to the physical environment are not anticipated to result.

Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Effects on community character as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-15 because the measures are similar. While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects, including effects on community cohesion, could also arise in those communities closest to character-changing effects and those most heavily influenced by agricultural activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-15.

CEQA Conclusion: Implementation of Conservation Measures 2–22 under Alternative 2A could affect community character within the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character are related to physical impacts involving population growth, these impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.
Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing
the Proposed Conservation Measures 2–22

NEPA Effects: Under Alternative 2A, effects on local government fiscal conditions as a result of
conservation measure implementation would be similar to those described under Alternative 1A,
Impact ECON-16. Conservation Measures 2–22 would remove some private land from local property
tax and assessment rolls. This economic effect would be considered adverse; however, the BDCP
proponents would offset forgone property tax and assessments levied by local governments and
special districts on private lands converted to habitat.

CEQA Conclusion: Under Alternative 2A, implementation of Conservation Measures 2–22 would
result in the removal of a portion of the property tax base for various local government entities in
the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is
estimated to reach $176.7 million. However, the BDCP proponents would compensate local
governments and special districts for forgone revenue. CEQA does not require a discussion of
socioeconomic effects except where they would result in physical changes. If an alternative is not
anticipated to result in a physical change to the environment, it would not be considered to have a
significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131).

Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the
Proposed Conservation Measures 2–22

NEPA Effects: Effects related to implementation of the Conservation Measures 2–22 under this
alternative would be similar to those described under Alternative 1A, Impact ECON-17. These
measures may result in adverse and beneficial effects on recreational resources in the Delta region,
resulting in the potential for decreased or increased economic activities related to recreation.

CEQA Conclusion: Implementation of conservation measures would limit opportunities for
recreation and compromise the quality of activities, leading to potential economic impacts.
However, over time, implementation could also improve the quality of existing recreational
opportunities, creating increased economic value with respect to recreation. This section considers
only the economic effects of recreational changes brought about by conservation measure
implementation. Potential physical changes to the environment relating to recreational resources
are described and evaluated in Chapter 15, Recreation, Section 15.3.3.5, Impacts REC-9 through REC-
11.

Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of
Implementing the Proposed Conservation Measures 2–22

Effects on agricultural economics as a result of the proposed Conservation Measures 2–22 would be
similar to those described under Alternative 1A, Impact ECON-18. Conservation Measures 2–22
would convert land from existing agricultural uses. These direct effects on agricultural land are
described qualitatively in Chapter 14, Agricultural Resources, Section 14.3.3.5, Impacts AG-3 and AG-
4. Effects on agricultural economics would include effects on crop production and agricultural
investments resulting from restoration actions on agricultural lands. The effects would be similar in
kind to those described for lands converted due to construction and operation of the conveyance
features and facilities. The total acreage and crop mix of agricultural land potentially affected is not
specified at this time, but when required, the BDCP proponents would provide compensation to
property owners for losses due to implementation of the alternative.
**NEPA Effects:** Because implementation of the Conservation Measures 2–22 would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources,* Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources,* Section 14.3.3.5, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources,* Section 14.3.3.2, Impact AG-1.

**Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions**

The socioeconomic effects associated with operation of Alternative 2A would be similar to those described under Alternative 1A, Impact ECON-19; however, the magnitude of the effects would be different based on different operational guidelines leading to different deliveries to hydrologic regions. Changes in deliveries to hydrologic regions could result in beneficial or adverse socioeconomic effects in these areas. In hydrologic regions where water deliveries are predicted to increase when compared with the No Action Alternative, more stable agricultural activities could support employment and economic production associated with agriculture.

**Changes in SWP Deliveries Compared to No Action Alternative**

Compared to No Action Alternative (2060), Alternative 2A would increase deliveries to all hydrologic regions except for the San Joaquin River Region, which would experience no change in deliveries. Compared to the No Action Alternative (2060), South Coast would receive the largest net increase (up to 183 TAF of Table A plus Article 21 deliveries) among the regions, which represents 65% of the net increase in M&I deliveries under Alternative 2A (refer to Chapter 30, *Growth Inducement and Other Indirect Effects,* Table 30-16, for more information).

**Changes in CVP Deliveries Compared to No Action Alternative**

Alternative 2A would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to the No Action Alternative (2060), Alternative 2A would result in increased deliveries to the other hydrologic regions. Compared to the No Action Alternative (2060), San Francisco Bay is projected to receive the largest potential increase (2 TAF) among the hydrologic regions (refer to Chapter 30, *Growth Inducement and Other Indirect Effects,* Table 30-17 for more information).

**NEPA Effects:** Where M&I deliveries increase, population growth could lead to general economic growth and support water-intensive industries. Changes to agricultural production and population growth with its associated economic activity could also lead to shifts in the character of
communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, growth associated with deliveries could require additional expenditures for local governments while also supporting increases in revenue.

**CEQA Conclusion:** As described above, the operational components of BDCP Conservation Measure 1 could result in a number of effects in areas receiving SWP and CVP water deliveries outside of the Delta.

**Changes in SWP Deliveries Compared to Existing Conditions**

Compared to Existing Conditions, Alternative 2A would increase deliveries to all hydrologic regions except for the San Joaquin River Region, which would experience no change in deliveries. South Coast would receive the largest net increase (up to 118 TAF of Table A) among the regions, which represents 63% of the net increase in M&I deliveries under Alternative 2A (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-16 for more information).

**Changes in CVP Deliveries Compared to Existing Conditions**

Alternative 2A would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan, and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to Existing Conditions, Alternative 2A would result in decreased deliveries to the other hydrologic regions. Compared to Existing Conditions, San Francisco Bay is projected to receive the largest decrease (5 TAF) among the hydrologic regions (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-17 for more information).

**Summary**

Operation of water conveyance facilities under Alternative 2A could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*.

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

Facilities constructed under Alternative 2B would be almost identical to those described for Alternative 1B. Alternative 2B could involve relocation of two of the intakes to a site south of the confluence of Sutter and Steamboat Sloughs and the Sacramento River (Intakes 6 and 7). Under this alternative, an operable barrier would also be constructed at the Head of Old River. Operations would be different under Alternative 2B than under Alternative 1B.

**Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Temporary effects on regional economics during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1B, Impact ECON-1. As shown in Table 16-25, over the construction period, regional effects of construction activities would result in direct employment of more than 29,000 FTE, with total employment effects in excess of 63,000 FTE. Increases in labor income associated with this employment would also be expected. Declines in
agricultural production would be expected to lead to a decrease in employment of 90 FTE, with total
effects leading to a decline of 340 FTE. Similarly, labor income related to these positions would
decline, as shown in Table 16-26.

**NEPA Effects:** Because construction of water conveyance facilities would result in an increase in
construction-related employment and labor income, this would be considered a beneficial effect.
However, these activities would also be anticipated to result in a decrease in agricultural-related
employment and labor income, which would be considered an adverse effect. Mitigation Measure
AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be
available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would increase total
employment and income in the Delta region, temporarily. The increase in employment and income
that would result from expenditures on construction would be greater than the reduction in
employment and income attributable to losses in agricultural production. Changes in recreational
expenditures and natural gas well operations could also affect regional employment and income, but
these have not been quantified. The total change in employment and income is not, in itself,
considered an environmental impact. Significant environmental impacts would only result if the
changes in regional economics cause physical impacts. Such effects are discussed in other chapters
throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and
Funding Sources*; removal of agricultural land from production is addressed in Chapter 14,
*Agricultural Resources*, Section 14.3.3.6, Impacts AG-1 and AG-2; changes in recreation related
activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.6, REC-1 through REC-4;
abandonment of natural gas wells is addressed in Chapter 26, *Mineral Resources*, Section 26.3.3.6,
Impact MIN-1. When required, DWR would provide compensation to property owners for economic
losses due to implementation of the alternative. While the compensation to property owners would
reduce the severity of economic effects related to the loss of agricultural land, it would not
constitute mitigation for any related physical impact. Measures to reduce these impacts are
discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly
Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for
loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security
Zones.

**Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of
the Proposed Water Conveyance Facilities**

Effects on population and housing during construction of the proposed water conveyance facilities
would be similar to those described under Alternative 1B, Impact ECON-2. It is anticipated that non-
local workers would temporarily relocate to the Delta region, thus adding to the local population.
However, this additional population would constitute a minor increase in the total 2020 projected
regional population of 4.6 million and be distributed throughout the region. Within specific local
communities, there could be localized effects on housing. However, given the availability of housing
within the five-county region, predicting where this impact might fall would be speculative. In
addition, new residents would likely be dispersed across the region, thereby not creating a burden
on any one community.

**NEPA Effects:** Because these activities would not result in permanent concentrated, substantial
increases in population or new housing, they would not be considered to have an adverse effect.
**CEQA Conclusion:** Construction of the proposed water conveyance facilities would result in minor temporary population increases in the Delta region, which has an adequate housing supply to accommodate the change in population. Therefore, adverse physical changes resulting from the minor increase in population are not anticipated.

**Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 2B, effects on community character would be similar in nature, location, and magnitude to those described under Alternative 1B, Impact ECON-3. Variations in the location of effects would result from the potential construction of Intakes 6 and 7 rather than Intakes 4 and 5 and the construction of an operable barrier at the Head of Old River. While water conveyance construction could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise as a result of declining economic stability or changes in community cohesion in communities closest to construction effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, *Environmental Commitments*). These actions are summarized under Alternative 1A, Impact ECON-3.

**CEQA Conclusion:** Construction of water conveyance facilities under Alternative 2B could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-2 and in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment. However, implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see Appendix 3B, *Environmental Commitments*). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito Management Plans.

**Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Effects on tax revenue as a result of water conveyance construction under Alternative 2B would be similar to those described under Alternative 1B, Impact ECON-4. While this economic effect would be considered adverse, BDCP proponents would compensate local governments for the loss of property tax or assessment revenue associated with construction of water conveyance facilities. Additionally, local entities could benefit from an increase in sales tax revenue.

**CEQA Conclusion:** Construction of water conveyance facilities for Alternative 2B would result in the removal of a portion of the property tax base for various local government entities in the Delta region. However, entities receiving water from the State Water Project and federal Central Valley Project would mitigate for lost property tax and assessment revenue associated with land needed...
for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any
losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not
require a discussion of socioeconomic effects except where they would result in reasonably
foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the
environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines
Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too
speculative to ascertain.

**Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed
Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 2B, disruption of recreational activities during the construction
period would be similar in character and magnitude to that described under Alternative 1B, Impact
ECON-5. Access to recreational facilities may be restricted throughout the construction period.
Additionally, the quality of recreational activities including boating, fishing, waterfowl hunting, and
hiking in the Delta could be indirectly affected by noise, lighting, traffic, and visual degradation in
proximity to water conveyance construction.

Construction of water conveyance structures under this alternative would be anticipated to result in
a lower-quality recreational experience in a number of localized areas throughout the Delta, despite
the implementation of mitigation measures, including enhancement of fishing access sites and
incorporation of recreational access into project design, and environmental and non-environmental
commitments, including providing funding to implement recreational improvements and control
aquatic weeds, providing notification of maintenance activities in waterways, and developing and
implementing a noise abatement plan, as described in Appendix 3B, *Environmental Commitments.*
With a decrease in recreational quality, the number of visits would be anticipated to decline, at least
in areas closest to construction activities. The multi-year schedule and geographic scale of
construction activities and the anticipated decline in recreational spending would be considered an
adverse effect. The commitments and mitigation measure cited above would contribute to the
reduction of this effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities under Alternative 2B
could impact recreational revenue in the Delta region if construction activities result in fewer visits
to the area. Fewer visits would be anticipated to result in decreased economic activity related to
recreational activities. This section considers only the economic effects of recreational changes
brought about by construction of the proposed water conveyance facilities. Potential physical
changes to the environment relating to recreational resources are described and evaluated in
Chapter 15, *Recreation*, Section 15.3.3.6, Impacts REC-1 through REC-4.

**Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of
the Proposed Water Conveyance Facilities**

Effects on agricultural economics during construction of the proposed water conveyance facilities
would be similar to those described under Alternative 1B, Impact ECON-6. Total value of irrigated
crop production in the Delta would decline on average by $32.8 million per year during the
construction period, with total irrigated crop acreage declining by about 19,460 acres. Alternative
2B may also affect production costs on lands even if gross revenues are largely unaffected. Costs
could be increased by operational constraints and longer travel times due to facilities construction.
Additionally, loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction.

**NEPA Effects:** Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.6, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on regional economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1B, Impact ECON-7. Increased expenditures related to operation and maintenance of water conveyance facilities would be expected to result in a permanent increase in regional employment and income, as presented in Table 16-28. The permanent removal of agricultural land following construction would have lasting negative effects on agricultural employment and income, as shown in Table 16-29.

**NEPA Effects:** Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would decrease total employment and income in the Delta region. The change would result from expenditures on operation and maintenance, increasing employment, and from changes in agricultural production, decreasing employment. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.6, Impacts AG-3 and AG-4; changes in recreation related
activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.6, Impacts REC-5 through REC-8. When required, DWR would provide compensation to landowners as a result of acquiring lands for the proposed conveyance facilities. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on population and housing during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1B, Impact ECON-8. It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. It is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population and therefore adverse changes in the physical environment are not anticipated.

**Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 2B, effects on community character would be similar in nature, location, and magnitude to those described under Alternative 1B, Impact ECON-9. Variations in the location of effects would result from the potential operation and maintenance of Intakes 6 and 7 rather than Intakes 4 and 5 and the operation of an operable barrier at the Head of Old River. While water conveyance operation and maintenance could result in beneficial effects relating to the economic welfare of a community, lasting adverse social effects, including effects on community cohesion, could also arise in communities closest to physical features and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects. These actions are summarized under Alternative 1A, Impact ECON-9.

**CEQA Conclusion:** Operation and maintenance of water conveyance facilities under Alternative 2B could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-8 and in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.
Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities

**NEPA Effects:** Effects on tax revenue as a result of ongoing water conveyance operation and maintenance under Alternative 2B would be similar to those described under Alternative 1B, Impact ECON-10. While this economic effect would be considered adverse, BDCP proponents would compensate local governments for the loss of property tax or assessment revenue associated with construction of water conveyance facilities.

**CEQA Conclusion:** Continued operation and maintenance of water conveyance facilities for Alternative 2B would result in the removal of a portion of the property tax base for various local government entities in the Delta region. However, entities receiving water from the State Water Project and federal Central Valley Project would mitigate for lost property tax and assessment revenue associated with land needed for the siting of conveyance facilities (Water Code Section 85089). CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities

**NEPA Effects:** Effects on recreation economics during operation and maintenance of the proposed water conveyance facilities under Alternative 2B would be similar to those described under Alternative 1A, Impact ECON-11. Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. Because effects of facility maintenance would be short-term and intermittent, substantial economic effects are not anticipated to result from operation and maintenance of the facilities.

**CEQA Conclusion:** Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 2B are anticipated to create minor effects on recreational resources and therefore, are not expected to substantially reduce economic activity related to recreational activities. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, *Recreation, Recreation*, Section 15.3.3.6, Impacts REC-5 through REC-8.

Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

Permanent effects on agricultural economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1B, Impact ECON-12. Total value of irrigated crop production in the Delta would decline on average by $29.2 million per year during operation and maintenance, with total irrigated crop acreage declining by about 17,700 acres. Alternative 2B may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints, changes in water quality, and longer travel times due to the permanent footprint of facilities. Additionally, loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction.
**NEPA Effects:** The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-2, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** During operation and maintenance of the proposed water conveyance facilities, the value of agricultural production in the Delta region would be reduced. The permanent removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.6, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-2, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


**NEPA Effects:** Effects on regional economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-13. In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-2, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, implementation of these components are anticipated to result in the abandonment of natural gas wells, causing a decrease in employment and labor income associated with monitoring and maintaining wells, which would be considered an adverse effect. Mitigation Measure MIN-5, described in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5, would be available to reduce these effects by minimizing, to the extent feasible, the need for well abandonment or relocation.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production activities. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*.
Impact ECON-14: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on population and housing as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-14. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired.

NEPA Effects: Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

CEQA Conclusion: Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes to the physical environment are not anticipated to result.

Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Effects on community character as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-15 because the measures are similar. While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects, including effects on community cohesion, could also arise in those communities closest to character-changing effects and those most heavily influenced by agricultural activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-15.

CEQA Conclusion: Implementation of Conservation Measures 2–22 under Alternative 2B could affect community character within the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character are related to physical impacts involving population growth, these impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Under Alternative 2B, effects on local government fiscal conditions as a result of conservation measure implementation would be similar to those described under Alternative 1A,
Impact ECON-16. Conservation Measures 2–22 would remove some private land from local property tax and assessment rolls. This economic effect would be considered adverse; however, the BDCP proponents would offset forgone property tax and assessments levied by local governments and special districts on private lands converted to habitat.

**CEQA Conclusion:** Under Alternative 2B, implementation of Conservation Measures 2–22 would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated to reach $176.7 million. However, the BDCP proponents would compensate local governments and special districts for forgone revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131).

**Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the Proposed Conservation Measures 2–22**

**NEPA Effects:** Effects related to implementation of the Conservation Measures 2–22 under this alternative would be similar to those described under Alternative 1B, Impact ECON-17. These measures may result in adverse and beneficial effects on recreational resources in the Delta region, resulting in the potential for decreased or increased economic activities related to recreation.

**CEQA Conclusion:** Implementation of conservation measures would limit opportunities for recreation and compromise the quality of activities, leading to potential economic impacts. However, over time, implementation could also improve the quality of existing recreational opportunities, creating increased economic value with respect to recreation. This section considers only the economic effects of recreational changes brought about by conservation measure implementation. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.6, Impacts REC-9 through REC-11.

**Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22**

Effects on agricultural economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-18, because the measures are similar. Conservation Measures 2–22 would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14, Agricultural Resources, Section 14.3.3.6, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents would provide compensation to property owners for losses due to implementation of the alternative.

**NEPA Effects:** Because implementation of the Conservation Measures 2–22 would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.6, Impacts AG-3 and AG-4.
Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.6, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1.

Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions

NEPA Effects: The socioeconomic effects associated with operation of Alternative 2B would be the same as those described under Alternative 2A, Impact ECON-19, because deliveries would be based on the same operational guidelines. Changes in deliveries to hydrologic regions could result in beneficial or adverse socioeconomic effects in these areas. In hydrologic regions where water deliveries are predicted to increase when compared with the No Action Alternative, more stable agricultural activities could support employment and economic production associated with agriculture. Where M&I deliveries increase, population growth could lead to general economic growth and support water-intensive industries. Such changes could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, growth associated with deliveries could require additional expenditures for local governments while also supporting increases in revenue.

CEQA Conclusion: Operation of water conveyance facilities under Alternative 2B could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.

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

Facilities construction under Alternative 2C would be almost identical to those described for Alternative 1C. However, an operable barrier would be constructed at the Head of Old River, which could lead to minor variations in effects from this alternative. Operations would be different under Alternative 2C than under Alternative 1C.

Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities

Temporary effects on regional economics during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1C, Impact ECON-1. As shown in Table 16-31, over the construction period, regional effects of construction activities would result in
direct employment of more than 26,000 FTE, with total employment effects of nearly 61,000 FTE. Increases in labor income associated with this employment would also be expected. Declines in agricultural production would be expected to lead to a decrease in employment of 64 FTE, with total effects leading to a decline of 240 FTE. Similarly, labor income related to these positions would decline, as shown in Table 16-32.

**NEPA Effects:** Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would increase total employment and income in the Delta region, temporarily. The increase in employment and income that would result from expenditures on construction would be greater than the reduction in employment and income attributable to losses in agricultural production. Changes in recreational expenditures and natural gas well operations could also affect regional employment and income, but these have not been quantified. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.7, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.3.7, REC-1 through REC-4; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.7, Impact MIN-1. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Effects on population and housing during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1C, Impact ECON-2. It is anticipated that non-local workers would temporarily relocate to the Delta region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Within specific local communities, there could be localized effects on housing. However, given the availability of housing within the five-county region, predicting where this impact might fall would be speculative. In addition, new residents would likely be dispersed across the region, thereby not creating a burden on any one community.
**NEPA Effects:** Because these activities would not result in permanent concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would result in minor temporary population increases in the Delta region, which has an adequate housing supply to accommodate the change in population. Therefore, adverse physical changes resulting from the minor increase in population are not anticipated.

**Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 2C, effects on community character would be similar in nature, location, and magnitude to those described under Alternative 1C, Impact ECON-3. Variation in the location of effects would result from the construction of an operable barrier at the Head of Old River. While water conveyance construction could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise as a result of declining economic stability or changes in community cohesion in communities closest to construction effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-3.

**CEQA Conclusion:** Construction of water conveyance facilities under Alternative 2A could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-2 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment. However, implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito Management Plans.

**Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Effects on tax revenue as a result of water conveyance construction under Alternative 2C would be similar to those described under Alternative 1C, Impact ECON-4. While this economic effect would be considered adverse, BDCP proponents would compensate local governments for the loss of property tax or assessment revenue associated with construction of water conveyance facilities. Additionally, local entities could benefit from an increase in sales tax revenue.

**CEQA Conclusion:** Construction of water conveyance facilities for Alternative 2C would result in the removal of a portion of the property tax base for various local government entities in the Delta region. However, entities receiving water from the State Water Project and federal Central Valley
Project would mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 2C, disruption of recreational activities during the construction period would be similar in character and magnitude to that described under Alternative 1C, Impact ECON-5. Access to recreational facilities may be restricted throughout the construction period. Additionally, the quality of recreational activities including boating, fishing, waterfowl hunting, and hiking in the Delta could be indirectly affected by noise, lighting, traffic, and visual degradation in proximity to water conveyance construction.

Construction of water conveyance structures under this alternative would be anticipated to result in a lower-quality recreational experience in a number of localized areas throughout the Delta, despite the implementation of mitigation measures, including enhancement of fishing access sites and incorporation of recreational access into project design, and environmental and non-environmental commitments, including providing funding to implement recreational improvements and control aquatic weeds, providing notification of maintenance activities in waterways, and developing and implementing a noise abatement plan, as described in Appendix 3B, Environmental Commitments. With a decrease in recreational quality, the number of visits would be anticipated to decline, at least in areas closest to construction activities. The multi-year schedule and geographic scale of construction activities and the anticipated decline in recreational spending would be considered an adverse effect. The commitments and mitigation measure cited above would contribute to the reduction of this effect.

CEQA Conclusion: Construction of the proposed water conveyance facilities under Alternative 2C could impact recreational revenue in the Delta region if construction activities result in fewer visits to the area. Fewer visits would be anticipated to result in decreased economic activity related to recreational activities. This section considers only the economic effects of recreational changes brought about by construction of the proposed water conveyance facilities. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.7, Impacts REC-1 through REC-4.

Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of the Proposed Water Conveyance Facilities

Effects on agricultural economics during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1C, Impact ECON-6. Total value of irrigated crop production in the Delta would decline on average by $22.2 million per year during the construction period, with total irrigated crop acreage declining by about 14,300 acres. Alternative 2C may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints and longer travel times due to facilities construction.
Additionally, loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction.

**NEPA Effects:** Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.7, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on regional economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1C, Impact ECON-7. Increased expenditures related to operation and maintenance of water conveyance facilities would be expected to result in a permanent increase in regional employment and income, as presented in Table 16-34. The permanent removal of agricultural land following construction would have lasting negative effects on agricultural employment and income, as shown in Table 16-35.

**NEPA Effects:** Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would increase total employment and income in the Delta region. The net change would result from expenditures on operation and maintenance and from changes in agricultural production. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.7, Impacts AG-3 and AG-4; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section.
15.3.3.7, Impacts REC-5 through REC-8. When required, DWR would provide compensation to landowners as a result of acquiring lands for the proposed conveyance facilities. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

Permanent effects on population and housing during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1C, Impact ECON-8. It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. It is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population and therefore adverse changes in the physical environment are not anticipated.

Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities

**NEPA Effects:** Under Alternative 2C, effects on community character would be similar in nature, location, and magnitude to those described under Alternative 1C, Impact ECON-9. Variations in the location of effects would result from the operation and maintenance of an operable barrier at the Head of Old River. While water conveyance operation and maintenance could result in beneficial effects relating to the economic welfare of a community, lasting adverse social effects, including effects on community cohesion, could also arise in communities closest to physical features and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-9.

**CEQA Conclusion:** Operation and maintenance of water conveyance facilities under Alternative 2C could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-8 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.
Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities

**NEPA Effects:** Effects on tax revenue as a result of ongoing water conveyance operation and maintenance under Alternative 2C would be similar to those described under Alternative 1C, Impact ECON-10. While this economic effect would be considered adverse, BDCP proponents would compensate local governments for the loss of property tax or assessment revenue associated with construction of water conveyance facilities. Additionally, local entities may benefit from an increase in sales tax revenue.

**CEQA Conclusion:** Continued operation and maintenance of water conveyance facilities for Alternative 2C would result in the removal of a portion of the property tax base for various local government entities in the Delta region. However, entities receiving water from the State Water Project and federal Central Valley Project would mitigate for lost property tax and assessment revenue associated with land needed for the siting of conveyance facilities (Water Code Section 85089). Additionally, any losses may be offset, at least in part, by an increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities

**NEPA Effects:** Effects on recreation economics during operation and maintenance of the proposed water conveyance facilities under Alternative 2C would be similar to those described under Alternative 1A, Impact ECON-11. Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. Because effects of facility maintenance would be short-term and intermittent, substantial economic effects are not anticipated to result from operation and maintenance of the facilities.

**CEQA Conclusion:** Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 2C are anticipated to create minor effects on recreational resources and therefore, are not expected to substantially reduce economic activity related to recreational activities. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.7, Impacts REC-5 through REC-8.

Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

Permanent effects on agricultural economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1C, Impact ECON-12. Total value of irrigated crop production in the Delta would decline on average by $17.7 million per year during operation and maintenance, with total irrigated crop acreage declining by about 11,700 acres. Alternative 2C may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints, changes in water quality, and longer travel times due to the permanent footprint of facilities. Additionally, loss of investments...
in production facilities and standing orchards and vineyards would occur as a result of facilities construction.

**NEPA Effects:** The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** During operation and maintenance of the proposed water conveyance facilities, the value of agricultural production in the Delta region would be reduced. The permanent removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.7, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


**NEPA Effects:** Effects on regional economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-13 because the measures are similar. In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, implementation of these components are anticipated to result in the abandonment of natural gas wells, causing a decrease in employment and labor income associated with monitoring and maintaining wells, which would be considered an adverse effect. Mitigation Measure MIN-5, described in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5, would be available to reduce these effects by minimizing, to the extent feasible, the need for well abandonment or relocation.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production activities. The total change in employment and income is not, in itself, considered an
environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impacts AG-3 and AG-4; changes in recreation-related activities are addressed in Chapter 15, Recreation, Section 15.3.3.2, Impacts REC-9 through REC-11; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5.

Impact ECON-14: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on population and housing as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-14 because the measures are similar. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes to the physical environment are not anticipated to result.

Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22

**NEPA Effects:** Effects on community character as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-15 because the measures are similar. While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects, including effects on community cohesion, could also arise in those communities closest to character-changing effects and those most heavily influenced by agricultural activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-15.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 under Alternative 2C could affect community character within the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character are related to physical impacts involving population growth, these impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.
Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing the Proposed Conservation Measures 2–22

**NEPA Effects:** Under Alternative 2C, effects on local government fiscal conditions as a result of conservation measure implementation would be similar to those described under Alternative 1A, Impact ECON-16 because the measures are similar. Conservation Measures 2–22 would remove some private land from local property tax and assessment rolls. This economic effect would be considered adverse; however, the BDCP proponents would offset forgone property tax and assessments levied by local governments and special districts on private lands converted to habitat.

**CEQA Conclusion:** Under Alternative 2C, implementation of Conservation Measures 2–22 would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated to reach $176.7 million. However, the BDCP proponents would compensate local governments and special districts for forgone revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131).

Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the Proposed Conservation Measures 2–22

**NEPA Effects:** Effects related to implementation of Conservation Measures 2–22 under this alternative would be similar to those described under Alternative 1A, Impact ECON-17 because the measures are similar. These measures may result in adverse and beneficial effects on recreational resources in the Delta region, resulting in the potential for decreased or increased economic activities related to recreation.

**CEQA Conclusion:** Implementation of conservation measures would limit opportunities for recreation and compromise the quality of activities, leading to potential economic impacts. However, over time, implementation could also improve the quality of existing recreational opportunities, creating increased economic value with respect to recreation. This section considers only the economic effects of recreational changes brought about by conservation measure implementation. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.7, Impacts REC-9 through REC-11.

Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on agricultural economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-18 because the measures are similar. Conservation Measures 2–22 would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14, Agricultural Resources, Section 14.3.3.7, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents
would provide compensation to property owners for losses due to implementation of the alternative.

**NEPA Effects:** Because implementation of the Conservation Measures 2-22 would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Implementation of Conservation Measures 2-22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.7, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1.

**Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions**

**NEPA Effects:** The socioeconomic effects associated with operation of Alternative 2C would be the same as those described under Alternative 2A, Impact ECON-19, because deliveries would be based on the same operational guidelines. Changes in deliveries to hydrologic regions could result in beneficial or adverse socioeconomic effects in these areas. In hydrologic regions where water deliveries are predicted to increase when compared with the No Action Alternative, more stable agricultural activities could support employment and economic production associated with agriculture. Where M&I deliveries increase, population growth could lead to general economic growth and support water-intensive industries. Such changes could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, growth associated with deliveries could require additional expenditures for local governments while also supporting increases in revenue.

**CEQA Conclusion:** Operation of water conveyance facilities under Alternative 2C could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*.

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

Facilities construction under Alternative 3 would be similar to those described for Alternative 1A but with only two intakes as opposed to five. Operations would be different under Alternative 3 than under Alternative 1A.
Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities

The regional economic effects on employment and income in the Delta region during construction were evaluated. Changes are shown relative to the Existing Conditions and the No Action Alternative (regional economic conditions do not differ between Existing Conditions and No Action Alternative). The effects on employment and income are displayed in Table 16-37. The table shows the direct and total change that would result from conveyance-related spending. As evident in Table 16-37, spending on conveyance construction results in substantial local economic activity in the region. As shown, direct construction employment is anticipated to vary over the 8-year construction period, with an estimated 1,818 FTE jobs in the first year and 111 FTE jobs in the final year of the construction period. Construction employment is estimated to peak at 2,849 FTE jobs in year 4.

Total employment (direct, indirect, and induced) would also peak in year 4, at 6,787 FTE jobs.

<table>
<thead>
<tr>
<th>Year</th>
<th>Employment (FTE)</th>
<th>Labor Income (million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct</td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
<td>1,818</td>
<td>10,297</td>
</tr>
<tr>
<td>2</td>
<td>2,034</td>
<td>8,515</td>
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<tr>
<td>3</td>
<td>2,713</td>
<td>9,634</td>
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<td>813</td>
</tr>
<tr>
<td>8</td>
<td>111</td>
<td>157</td>
</tr>
<tr>
<td>Total</td>
<td>14,904</td>
<td>49,872</td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).

The footprint of conveyance and related facilities such as roads and utilities would remove some existing agricultural land from production, so the effects on employment and income would be negative. The regional economic effects on employment and income in the Delta region from the change in agricultural production are reported in Table 16-38. As shown, direct agricultural employment would be reduced by an estimated 22 FTE jobs, while total employment (direct, indirect, and induced) associated with agricultural employment would fall by 88 FTE jobs. Mapbook Figures M14-1 and M14-2 display areas of Important Farmland and lands under Williamson Act contracts that could be converted to other uses due to the construction of water conveyance facilities for the Pipeline/Tunnel alignment. Note that not all of these structures would be constructed under this alternative.
Table 16-38. Regional Economic Effects on Agricultural Employment and Labor Income during Construction (Alternative 3)

<table>
<thead>
<tr>
<th>Regional Economic Impact</th>
<th>Impacts on Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment (FTE)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-23</td>
</tr>
<tr>
<td>Total(^b)</td>
<td>-88</td>
</tr>
<tr>
<td>Labor Income (million $)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-2.9</td>
</tr>
<tr>
<td>Total(^b)</td>
<td>-5.6</td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).

\(^a\) IMPLAN results are changes relative to Existing Condition or No Action Alternative.

\(^b\) Includes direct, indirect, and induced effects.

Additionally, the Alternative 3 construction footprint would result in the abandonment of an estimated six producing natural gas wells in the study area, as described in Chapter 26, Mineral Resources, Section 26.3.3.8, Impact MIN-1. This could result in the loss of employment and labor income associated with monitoring and maintaining these wells. Generally, small crews perform ongoing monitoring and maintenance of several wells at a time. As shown in Chapter 26, Mineral Resources, Table 26-3, 516 active producer wells are located in the study area. Even if all six producing wells in the Alternative 3 construction footprint were abandoned and not replaced with new wells installed outside the construction footprint, the percentage reduction in the number of natural gas wells would be very small. As a result, the employment and labor income effects associated with well abandonment, while negative, would be minimal.

**NEPA Effects:** Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would increase total employment and income in the Delta region during the construction period. The change would result from expenditures on construction, increasing employment, and from changes in agricultural production, decreasing employment. Changes in recreational expenditures and natural gas well operations could also affect regional employment and income, but these have not been quantified. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout the EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.8, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.3.8, REC-1 through REC-4; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.8, Impact MIN-1. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related environment.
physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

**Population**

Construction of conveyance facilities would require an estimated peak of 2,850 workers in year 4 of the assumed 8-year construction period. It is anticipated that many of these new jobs would be filled from within the existing five-county labor force. However, construction of the tunnels may require specialized worker skills not readily available in the local labor pool. As a result, it is anticipated that some specialized workers may be recruited from outside the five-county region. Considering the multi-year duration of conveyance facility construction, it is anticipated that non-local workers would temporarily relocate to the five-county region, thus adding to the local population. As discussed in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.1, Direct Growth Inducement, an estimated 30 percent of workers could come from out of the Delta region, suggesting that approximately 900 workers could relocate to the Delta region at the peak of the construction period. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Changes in demand for public services resulting from any increase in population are addressed in Chapter 20, Public Services and Utilities, Section 20.3.3.8, Impact UT-1 through UT-6.

**Housing**

Changes in housing demand are based on changes in supply resulting from displacement during facilities construction and changes in housing demand resulting from employment associated with construction of conveyance facilities. As described in Chapter 13, Land Use, Section 13.3.3.8, Impact LU-2, construction of water conveyance facilities under Alternative 3 would conflict with approximately 37 residential structures.

The construction workforce would most likely commute daily to the work site from within the five-county region; however, if needed, there are about 53,000 housing units available to accommodate workers who may choose to commute on a workweek basis or who may choose to temporarily relocate to the region for the duration of the construction period, including the estimated 900 workers who may temporarily relocate to the Delta region from out of the region. In addition to the available housing units, there are recreational vehicle parks and hotels and motels within the five-county region to accommodate any construction workers. As a result, and as discussed in more detail in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.1, Direct Growth Inducement, construction of the proposed conveyance facilities is not expected to substantially increase the demand for housing within the five-county region.

**NEPA Effects:** Within specific local communities, there could be localized effects on housing. However, given the availability of housing within the five-county region, predicting where this impact might fall would be speculative. In addition, new residents would likely be dispersed across the region, thereby not creating a burden on any one community.
Because these activities would not result in permanent concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion**: Construction of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population. Therefore, the minor increase in population is not anticipated to result in any adverse changes to the physical environment.

**Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects**: Under Alternative 3, effects on community character would be similar in nature and location to those described under Alternative 1A, Impact ECON-3. However, the intensity of these effects would be reduced due to the construction of only two intake facilities. As such, regional population and employment would increase to levels described above under Impact ECON-1 and ECON-2. While water conveyance construction could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise as a result of declining economic stability or changes in community cohesion in communities closest to construction effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, *Environmental Commitments*). These actions are summarized under Alternative 1A, Impact ECON-3.

**CEQA Conclusion**: Construction of water conveyance facilities under Alternative 3 could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-2 and in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment. However, implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see Appendix 3B, *Environmental Commitments*). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito Management Plans.

**Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects**: Effects on tax revenue as a result of water conveyance construction under Alternative 3 would be similar to those described under Alternative 1A, Impact ECON-4. However, due to the construction of fewer intake facilities, forgone revenue is estimated at $7.6 million over the construction period. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the BDCP. This economic effect would be adverse; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for
constructing, locating, operating, or mitigating for new Delta water conveyance facilities.

Additionally, as discussed under Impact ECON-2, construction of the water conveyance facilities would be anticipated to result in a net increase of income and employment in the Delta region. This would also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Under Alternative 3, construction of water conveyance facilities would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the construction period, property tax and assessment revenue forgone is estimated at $7.6 million. However, the Sacramento-San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 3, disruption of recreational activities during the construction period would be similar in character to that described under Alternative 1A, Impact ECON-5. However, only Intakes 1 and 2 would be constructed under this alternative. While access to recreational facilities would be maintained throughout construction, the quality of recreational activities including boating, fishing, waterfowl hunting, and hiking in the Delta could be indirectly affected by noise, lighting, traffic, and visual degradation in proximity to water conveyance construction. Relative to Alternative 1A, however, two fewer established recreational sites or areas would be affected by this alternative.

Construction of water conveyance structures under this alternative would be anticipated to result in a lower-quality recreational experience in a number of localized areas throughout the Delta, despite the implementation of mitigation measures, including enhancement of fishing access sites and incorporation of recreational access into project design, and environmental and non-environmental commitments, including providing funding to implement recreational improvements and control aquatic weeds, providing notification of maintenance activities in waterways, and developing and implementing a noise abatement plan, as described in Appendix 3B, Environmental Commitments. With a decrease in recreational quality, the number of visits would be anticipated to decline, at least in areas closest to construction activities. The multi-year schedule and geographic scale of construction activities and the anticipated decline in recreational spending would be considered an adverse effect. The commitments and mitigation measure cited above would contribute to the reduction of this effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities under Alternative 3 could impact recreational revenue in the Delta region if construction activities result in fewer visits to the area. Fewer visits would be anticipated to result in decreased economic activity related to recreational activities. This section considers only the economic effects of recreational changes brought about by construction of the proposed water conveyance facilities. Potential physical
changes to the environment relating to recreational resources are described and evaluated in Chapter 15, *Recreation*, Section 15.3.3.8, Impacts REC-1 through REC-4.

Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of the Proposed Water Conveyance Facilities

Construction of conveyance facilities would convert land from existing agricultural uses to uses that include direct facility footprints, construction staging areas, borrow/spoils areas, RTM storage, temporary and permanent roads, and utilities. Agricultural land could also be affected by changes in water quality and other conditions that would affect crop productivity. These direct effects on agricultural land are described in Chapter 14, *Agricultural Resources*, Section 14.3.3.8, Impacts AG-1 and AG-2.

Changes in crop acreage were used to describe the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, *Environmental Setting/Affected Environment*. Table 16-39 summarizes the changes in acreage and value of agricultural production that would result in the Delta region as a result of Alternative 3 construction. Changes are shown relative to the Existing Conditions and the No Action Alternative, by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The table also includes a summary of changes in crop acreages that are reported in greater detail in Appendix 14A, *Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction*.

Total value of irrigated crop production in the Delta would decline on average by $8.3 million per year during the construction period, with total irrigated crop acreage declining by about 5,100 acres. These estimates are not dependent on water year type.

Alternative 3 may also affect production costs, investments in production facilities and standing orchards and vineyards, and salinity of agricultural water supply. Effects would be similar to those qualitatively described under Alternative 1A, Impact ECON-6. Chapter 14, *Agricultural Resources*, Section 14.3.3.8, Impacts AG-1 and AG-2, provides discussion of indirect effects on agricultural resources.
Table 16-39. Crop Acres and Value of Agricultural Production in the Delta during Construction (Alternative 3)

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 3</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>478.5</td>
<td>-5.1</td>
</tr>
<tr>
<td>Grains</td>
<td>58.2</td>
<td>-0.5</td>
</tr>
<tr>
<td>Field crops</td>
<td>189.5</td>
<td>-1.6</td>
</tr>
<tr>
<td>Forage crops</td>
<td>111.5</td>
<td>-1.2</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>76.6</td>
<td>-0.5</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>42.7</td>
<td>-1.3</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>641.8</td>
<td>-8.3</td>
</tr>
<tr>
<td>Grains</td>
<td>24.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>Field crops</td>
<td>112.8</td>
<td>-1.0</td>
</tr>
<tr>
<td>Forage crops</td>
<td>72.1</td>
<td>-1.0</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>266.5</td>
<td>-1.8</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>166.2</td>
<td>-4.3</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).

**NEPA Effects:** Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.8, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on regional economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-7. Increased expenditures related to operation and maintenance of water conveyance facilities would be expected to result in a permanent increase in regional employment and income, as presented in...
Table 16-22. The permanent removal of agricultural land following construction would have lasting negative effects on agricultural employment and income, as shown in Table 16-23.

**NEPA Effects:** Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would increase total employment and income in the Delta region. The net change would result from expenditures on operation and maintenance and from changes in agricultural production. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.8, Impacts AG-3 and AG-4; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.8, Impacts REC-5 through REC-8. When required, DWR would provide compensation to landowners as a result of acquiring lands for the proposed conveyance facilities. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on population and housing during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-8. It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. It is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population and therefore adverse changes in the physical environment are not anticipated.
**Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 3, effects on community character would be similar in nature and location to those described under Alternative 1A, Impact ECON-9. However, the intensity of these effects would be reduced based on the operation and maintenance of two intake facilities. While water conveyance operation and maintenance could result in beneficial effects relating to the economic welfare of a community, lasting adverse social effects, including effects on community cohesion, could also arise in communities closest to physical features and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, *Environmental Commitments*). These actions are summarized under Alternative 1A, Impact ECON-9.

**CEQA Conclusion:** Operation and maintenance of water conveyance facilities under Alternative 3 could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-8 and in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

**Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Effects on tax revenue as a result of ongoing water conveyance operations under Alternative 3 would be similar to those described under Alternative 1A, Impact ECON-10. However, with the construction of fewer intake facilities, forgone revenue is estimated at $45.8 million over the 50-year permit period, a smaller reduction than in Alternative 1A. These decreases in revenue could potentially result in the loss of a significant share of some agencies’ tax bases, particularly for smaller districts affected by the BDCP. This economic effect would be adverse; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for constructing, locating, operating, or mitigating for new Delta water conveyance facilities. Additionally, as discussed under Impact ECON-7, continued operation and maintenance of the water conveyance facilities would be anticipated to result in a net increase of income and employment in the Delta region. This could also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Under Alternative 3, the ongoing operation and maintenance of water conveyance facilities would reduce property tax revenues for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated at $45.8 million, compared with annual property tax revenue of more than $934 million in the Delta counties (California State Controller’s Office 2012). Projected over the 50-year period, these removals would likely represent less than 1% of these counties’ property tax revenue. However, the Sacramento-San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an
anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities

Effects on recreation economics during operation and maintenance of the proposed water conveyance facilities under Alternative 3 would be similar to those described under Alternative 1A, Impact ECON-11.

NEPA Effects: Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. Because effects of facility maintenance would be short-term and intermittent, significant economic effects are not anticipated to result from operation and maintenance of the facilities.

CEQA Conclusion: Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 3 are anticipated to create minor effects on recreational resources and therefore, are not expected to significantly reduce economic activity related to recreational activities. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.8, Impacts REC-5 through REC-8.

Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

During operation and maintenance of conveyance facilities existing agricultural land would be in uses that include direct facility footprints and associated permanent roads and utilities. Agricultural land could also be affected by changes in water quality and other conditions that would affect crop productivity. These direct effects on agricultural land are described in Chapter 14, Agricultural Resources, Section 14.3.3.8, Impacts AG-1 and AG-2.

Changes in crop acreage were used to estimate the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, Environmental Setting/Affected Environment. Table 16-40 summarizes the changes in acreage and value of agricultural production that would result in the Delta region during operation of Alternative 3. Changes are shown relative to the Existing Conditions and the No Action Alternative by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The changes in crop acreages are reported in greater detail in Appendix 14A, Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction.

Total value of irrigated crop production in the Delta region would decline on average by $7.1 million per year during operation and maintenance, with total irrigated crop acreage declining by about 4,300 acres. These estimates are not dependent on water year type.
Table 16-40. Crop Acres and Value of Agricultural Production in the Delta during Operations and Maintenance (Alternative 3)

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 3</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>479.3</td>
<td>-4.3</td>
</tr>
<tr>
<td>Grains</td>
<td>58.3</td>
<td>-0.3</td>
</tr>
<tr>
<td>Field crops</td>
<td>189.8</td>
<td>-1.3</td>
</tr>
<tr>
<td>Forage crops</td>
<td>111.6</td>
<td>-1.1</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>76.7</td>
<td>-0.4</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>42.8</td>
<td>-1.2</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>642.9</td>
<td>-7.1</td>
</tr>
<tr>
<td>Grains</td>
<td>24.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>Field crops</td>
<td>113.1</td>
<td>-0.8</td>
</tr>
<tr>
<td>Forage crops</td>
<td>72.2</td>
<td>-0.9</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>266.9</td>
<td>-1.5</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>166.7</td>
<td>-3.8</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).

Alternative 3 may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be associated with operational constraints and longer travel times due to permanent facilities. In most cases, affected lands fall within the facilities footprint, and are included in the agricultural acreage and value of production described elsewhere in this chapter and in Chapter 14, Agricultural Resources, Section 14.3.3.8.

Crop yields and crop selection on lands in the Delta could be affected by changes in salinity of agricultural water supply during operation and maintenance activities. If operation of the proposed conveyance facilities increases salinity in part of the Delta, crops that are more sensitive to salinity could shift to other lands in the five-county Delta region. See Chapter 14, Agricultural Resources, Section 14.3.3.8, Impact AG-2, for further discussion of effects from changes in salinity.

**NEPA Effects:** The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** During operation and maintenance of the proposed water conveyance facilities the value of agricultural production in the Delta region would be reduced. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.8, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical effect. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly...
Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


**NEPA Effects:** Effects on regional economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-13 because the measures are similar. In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, implementation of these components is anticipated to result in the abandonment of natural gas wells, causing a decrease in employment and labor income associated with monitoring and maintaining wells, which would be considered an adverse effect. Mitigation Measure MIN-5, described in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5, would be available to reduce these effects by minimizing, to the extent feasible, the need for well abandonment or relocation.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production activities. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impacts AG-3 and AG-4; changes in recreation-related activities are addressed in Chapter 15, Recreation, Section 15.3.3.2, Impacts REC-9 through REC-11; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5.

**Impact ECON-14: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22**

Effects on population and housing as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-14 because the measures are similar. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta

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region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes to the physical environment are not anticipated to result.

Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22

**NEPA Effects:** Effects on community character as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-15 because the measures are similar. While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects, including effects on community cohesion, could also arise in those communities closest to character-changing effects and those most heavily influenced by agricultural activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-15.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 under Alternative 3 could affect community character within the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character are related to physical impacts involving population growth, these impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing the Proposed Conservation Measures 2–22

**NEPA Effects:** Under Alternative 3, effects on local government fiscal conditions as a result of conservation measure implementation would be similar to those described under Alternative 1A, Impact ECON-16. Conservation Measures 2–22 would remove some private land from local property tax and assessment rolls. This economic effect could be considered substantial and adverse; however, the magnitude of this effect would depend on the footprints of restoration areas. The BDCP proponents would arrange to offset forgone property tax and assessments levied by local governments and special districts on private lands converted to habitat.

**CEQA Conclusion:** Under Alternative 3, implementation of Conservation Measures 2–22 would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated to reach $176.7 million. However, the BDCP proponents would compensate local governments and special districts for forgone revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131).
Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Effects related to implementation of Conservation Measures 2–22 under this alternative would be similar to those described under Alternative 1A, Impact ECON-17. These measures may result in adverse and beneficial effects on recreational resources in the Delta region, resulting in the potential for decreased or increased economic activities related to recreation.

CEQA Conclusion: Implementation of conservation measures would limit opportunities for recreation and compromise the quality of activities, leading to potential economic impacts. However, over time, implementation could also improve the quality of existing recreational opportunities, creating increased economic value with respect to recreation. This section considers only the economic effects of recreational changes brought about by conservation measure implementation. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.8, Impacts REC-9 through REC-11.

Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on agricultural economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-18 because the measures are similar. Conservation Measures 2–22 would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14, Agricultural Resources, Section 14.3.3.8, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents would provide compensation to property owners for losses due to implementation of the alternative.

NEPA Effects: Because implementation of Conservation Measures 2–22 would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.8, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1.
Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions

The socioeconomic effects associated with operation of Alternative 3 would be similar to those described under Alternative 1A, Impact ECON-19; however, the magnitude of the effects would be different based on the construction of two intakes and different operational guidelines leading to different deliveries to hydrologic regions. Changes in deliveries to hydrologic regions could result in beneficial or adverse socioeconomic effects in these areas. In hydrologic regions where water deliveries are predicted to increase when compared with the No Action Alternative, more stable agricultural activities could support employment and economic production associated with agriculture.

Changes in SWP Deliveries Compared to No Action Alternative

Compared to No Action Alternative (2060), Alternative 3 would increase deliveries to all hydrologic regions except for the San Joaquin River Region, which would experience no change in deliveries. Compared to the No Action Alternative (2060), South Coast would receive the largest net increase (up to 280 TAF of Table A plus Article 21 deliveries) among the regions, which represents 68% of the net increase in Table A plus Article 21 M&I deliveries under Alternative 3 (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-16, for more information).

Changes in CVP Deliveries Compared to No Action Alternative

Alternative 3 would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to the No Action Alternative (2060), Alternative 3 would result in increased deliveries to the other hydrologic regions. Compared to the No Action Alternative (2060) San Francisco Bay is projected to receive the largest potential increase (6 TAF) among the hydrologic regions (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-17 for more information).

NEPA Effects: Where M&I deliveries increase, population growth could lead to general economic growth and support water-intensive industries. Changes to agricultural production and population growth with its associated economic activity could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, growth associated with deliveries could require additional expenditures for local governments while also supporting increases in revenue.

CEQA Conclusion: As described above, the operational components of BDCP Conservation Measure 1 could result in a number of effects in areas receiving SWP and CVP water deliveries outside of the Delta.

Changes in SWP Deliveries Compared to Existing Conditions

Compared to Existing Conditions, Alternative 3 would increase deliveries to all hydrologic regions except for the San Joaquin River Region, which would experience no change in deliveries. South Coast would receive the largest net increase (up to 210 TAF of Table A plus Article 21 deliveries) among the regions, which represents 70% of the net increase in M&I deliveries (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-16 for more information).
Changes in CVP Deliveries Compared to Existing Conditions

Alternative 3 would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan, and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to Existing Conditions, Alternative 3 would result in decreased deliveries to the other hydrologic regions. Compared to Existing Conditions, San Francisco Bay is projected to receive the largest decrease (2 TAF) among the hydrologic regions (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-17 for more information).

Summary

Operation of water conveyance facilities under Alternative 3 could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects.

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

Alternative 4 would result in temporary effects on lands and communities associated with construction of three intakes and intake pumping plants, and other associated facilities; an intermediate forebay; conveyance pipelines; tunnels; an operable barrier at the head of Old River, and a new 600 acre Byron Tract Forebay, adjacent to and south of Clifton Court Forebay. Nearby areas would be altered as work or staging areas, concrete batch plants, fuel stations, or be used for spoils storage areas. Transmission lines, access roads, and other incidental facilities would also be needed for operations, and construction of these structures would also have effects on lands and communities.

The following impact analysis is divided into four subsections: effects of construction of facilities under CM1 in the Delta region, effects of operations of facilities under CM1 in the Delta region, effects of implementation of other conservation measures, and effects in hydrologic regions outside of the Delta as a result of changes in water deliveries.

Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities

The regional economic effects on employment and income in the Delta region during construction were evaluated. Changes are shown relative to the Existing Conditions and the No Action Alternative (regional economic conditions do not differ between Existing Conditions and No Action Alternative). The effects on employment and income are displayed in Table 16-41. The table shows the direct and total changes that would result from conveyance-related spending. As evident in Table 16-41, spending on conveyance construction would result in substantial economic activity in the region. As shown, direct construction employment is anticipated to vary over the 8-year construction period, with an estimated 2,437 FTE jobs in the first year and 132 FTE jobs in the final year of the construction period. Construction employment is estimated to peak at 3,937 FTE jobs in year 3. Total employment (direct, indirect, and induced) would peak in year 1, at 16,029 FTE jobs.
### Table 16-41. Regional Economic Effects on Employment and Labor Income during Construction (Alternative 4)

<table>
<thead>
<tr>
<th>Regional Economic Impact</th>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment (FTE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Direct</td>
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<td>Total</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Labor Income (million $)</td>
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<td></td>
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<td></td>
<td></td>
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<td>Direct</td>
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<td>Total</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).

*IMPLAN results are changes relative to Existing Condition or No Action Alternative.*

*Includes direct, indirect, and induced effects; numbers may not sum to the total due to rounding. Detailed estimates are presented in Appendix 16A, *Regional Economic Impacts of Water Conveyance Facility Construction.*

The footprint of conveyance and related facilities such as roads and utilities would remove some existing agricultural land from production, so the effects on employment and income would be negative. The regional economic effects on employment and income in the Delta region from the change in agricultural production are reported in Table 16-42. As shown, direct agricultural employment would be reduced by an estimated 16 FTE jobs, while total employment (direct, indirect, and induced) associated with agricultural employment would fall by 57 FTE jobs. Mapbook Figures M14-7 and M14-8 display areas of Important Farmland and lands under Williamson Act contracts that could be converted to other uses due to the construction of water conveyance facilities for the Modified Pipeline/Tunnel alignment. Note that not all of these structures would be constructed under this alternative.

### Table 16-42. Regional Economic Effects on Agricultural Employment and Labor Income during Construction (Alternative 4)

<table>
<thead>
<tr>
<th>Regional Economic Impact</th>
<th>Impacts on Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment (FTE)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-16</td>
</tr>
<tr>
<td>Total</td>
<td>-57</td>
</tr>
<tr>
<td>Labor Income (million $)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-1.8</td>
</tr>
<tr>
<td>Total</td>
<td>-3.5</td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).

*IMPLAN results are changes relative to Existing Condition or No Action Alternative.*

*Includes direct, indirect, and induced effects.*

Additionally, the Alternative 4 construction footprint would result in the abandonment of an estimated six producing natural gas wells in the study area, as described in Chapter 26, *Mineral Resources,* Section 26.3.3.9, Impact MIN-1. This could result in the loss of employment and labor.
income associated with monitoring and maintaining these wells. Generally, small crews perform ongoing monitoring and maintenance of several wells at a time. As shown in Chapter 26, Mineral Resources, Table 26-3, 516 active producer wells are located in the study area. Even if all six producing wells in the Alternative 4 construction footprint were abandoned and not replaced with new wells installed outside the construction footprint, the percentage reduction in the number of natural gas wells would be very small. As a result, the employment and labor income effects associated with well abandonment, while negative, would be minimal.

**NEPA Effects:** Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would temporarily increase total employment and income in the Delta region. The change would result from expenditures on construction, increasing employment, and from changes in agricultural production, decreasing employment. Changes in recreational expenditures and natural gas well operations could also affect regional employment and income, but these have not been quantified. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.9, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.3.9, REC-1 through REC-4; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.9, Impact MIN-1. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

**Population**

Construction of conveyance facilities would require an estimated peak of 3,937 workers in year 3 of the assumed 8-year construction period. It is anticipated that many of these new jobs would be filled from within the existing five-county labor force. However, construction of the tunnels may require specialized worker skills not readily available in the local labor pool. As a result, it is anticipated that some specialized workers may be recruited from outside the five-county region.

Considering the multi-year duration of conveyance facility construction, it is anticipated that non-local workers would temporarily relocate to the five-county region, thus adding to the local
population. As discussed in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.1, Direct Growth Inducement, an estimated 30 percent of workers could come from out of the Delta region, suggesting that approximately 1,180 workers could relocate to the Delta region at the peak of the construction period. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Changes in demand for public services resulting from any increase in population are addressed in Chapter 20, *Public Services and Utilities*, Section 20.3.3.9, Impact UT-1 through UT-6.

**Housing**

Changes in housing demand are based on changes in supply resulting from displacement during facilities construction and changes in housing demand resulting from employment associated with construction of conveyance facilities. As described in Chapter 13, *Land Use*, Section 13.3.3.9, Impact LU-2, construction of water conveyance facilities under Alternative 4 would conflict with approximately 19 residential structures.

The construction workforce would most likely commute daily to the work sites from within the five-county region; however, if needed, there are about 53,000 housing units available to accommodate workers who may choose to commute to on a workweek basis or who may choose to temporarily relocate to the region for the duration of the construction period, including the estimated 1,180 workers who may temporarily relocate to the Delta region from out of the region. In addition to the available housing units, there are recreational vehicle parks and hotels and motels within the five-county region to accommodate any construction workers. As a result, and as discussed in more detail in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.1, Direct Growth Inducement, construction of the proposed conveyance facilities is not expected to substantially increase the demand for housing within the five-county region.

**NEPA Effects:** Within specific local communities, there could be localized effects on housing. However, given the availability of housing within the five-county region, predicting where this impact might fall would be speculative. In addition, new residents would likely be dispersed across the region, thereby not creating a burden on any one community.

Because these activities would not result in permanent concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population. Therefore, the minor increase in housing is not anticipated to lead to adverse physical changes to the environment.

**Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Throughout the five-county Delta region, population and employment would expand as a result of the construction of water conveyance facilities, as discussed under Impacts ECON-1 and ECON-2. Agricultural contributions to the character and culture of the Delta would be likely to decline commensurate with the projected decline in agricultural-related acreage, employment, and production. This could result in the closure of agriculture-dependent businesses or those catering to agricultural workers, particularly in areas where conversion of agricultural land would be most concentrated, including near the intake pumping plants in the vicinity of Clarksburg and Hood and...
Socioeconomics

the expanded Clifton Court Forebay east of Byron. Similar effects on community character could result from anticipated changes to recreation in the study area. However, social influences associated with the construction industry would grow during the multi-year construction period for water conveyance structures under Alternative 4. To the extent that this anticipated economic shift away from agriculture and towards construction results in demographic changes in population, employment level, income, age, gender, or race, the study area would be expected to see changes to its character, particularly in those Delta communities most substantially affected by demographic changes based on their size, ability to accommodate growth, or proximity to BDCP activities. In comparing the existing demographic composition of agricultural workers and construction laborers within the five-county Delta Region, men make up a large proportion of both occupations: 84 percent of agricultural workers were male, compared with 98 percent of construction laborers. Approximately 92 percent of agricultural workers made less than $35,000, while 60 percent of construction laborers made less than $35,000. Additionally, 87 percent of agricultural workers within the study area report Hispanic origin, while 54 percent of construction laborers claim Hispanic origin within the five-county area (U.S. Census Bureau 2012b).

Legacy communities in the Delta, which are those identified as containing distinct historical and cultural character, include Locke, Bethel Island, Clarksburg, Courtland, Freeport, Hood, Isleton, Knightsen, Rio Vista, Ryde, and Walnut Grove. These communities provide support services and limited workforce housing for the area's agricultural industry. Some housing is also provided to retirees and workers commuting to nearby urban areas including Sacramento. Construction activities associated with BDCP water conveyance facilities would be anticipated to result in changes to the rural qualities of these communities during the construction period (characterized by predominantly agricultural land uses, relatively low population densities, and low levels of associated noise and vehicular traffic), particularly for those communities in proximity to water conveyance structures, including Clarksburg, Hood, and Walnut Grove. Effects associated with construction activities could also result in changes to community cohesion if they were to restrict mobility, reduce opportunities for maintaining face-to-face relationships, or disrupt the functions of community organizations or community gathering places (such as schools, libraries, places of worship, and recreational facilities). Under Alternative 4, several gathering places that lie in the vicinity of construction areas could be indirectly affected by noise and traffic associated with construction activities, including Delta High School, the Clarksburg Library, Clarksburg Community Church, Resurrection Life Community Church, Citizen Land Alliance, Discovery Bay Chamber of Commerce, Courtland Fire Department, and several marinas or other recreational facilities (see Chapter 15, Recreation, Table 15-15).

In addition to potential changes in the demographic composition of communities in the study area, construction of water conveyance facilities under Alternative 4 could also affect the size of the communities, as suggested above. Based upon the projections developed under Impacts ECON-1 and ECON-2, the total population and employment base of the study area would expand during water facility construction. This expansion could provide economic opportunities during this period, which could support community stability by increasing investment in Delta communities. However, as noted under the discussion of housing above, predicting the specific location of such investments within the study area would be speculative.

Under Alternative 4, additional regional employment and income could create net positive effects on the character of Delta communities. In addition to potential demographic effects associated with changes in employment, however, property values may decline in areas that become less desirable in which to live, work, shop, or participate in recreational activities. For instance, negative visual-
noise-related effects on residential property could lead to localized abandonment of buildings. While
water conveyance construction could result in beneficial effects relating to the economic welfare of a
community, adverse social effects could also arise as a result of declining economic stability in
communities closest to construction effects and in those most heavily influenced by agricultural and
recreational activities. Implementation of mitigation measures and environmental commitments
related to noise, visual effects, transportation, agriculture, and recreation, would reduce adverse
effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments include
Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous
Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways,
Noise Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito
Management Plans.

CEQA Conclusion: Construction of water conveyance facilities under Alternative 4 could affect
community character in the Delta region. However, because these impacts are social in nature,
rather than physical, they are not considered impacts under CEQA. To the extent that changes to
community character would lead to physical impacts involving population growth, such impacts are
described under Impact ECON-2 and in Chapter 30, Growth Inducement and Other Indirect Effects,
Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to
specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community
character stemming from a lack of maintenance, upkeep, and general investment. However,
implementation of mitigation measures and environmental commitments related to noise, visual
effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see
Appendix 3B, Environmental Commitments). Specifically, these commitments include Develop and
Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials
Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise
Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito
Management Plans.

Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing
the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 4, publicly-owned water conveyance facilities would be constructed
on land of which some is currently held by private owners. Property tax and assessment revenue
forgone as a result of water conveyance facilities is estimated at $8.2 million over the construction
period. These decreases in revenue could potentially result in the loss of a substantial share of some
agencies’ tax bases, particularly for smaller districts affected by the BDCP, such as reclamation
districts where conveyance facilities and associated work areas are proposed. This economic effect
would be considered adverse; however, the BDCP proponents would make arrangements to
compensate local governments for the loss of property tax or assessment revenue for land used for
constructing, locating, operating, or mitigating for new Delta water conveyance facilities.⁸
Additionally, as discussed under Impact ECON-1, construction of the water conveyance facilities
would be anticipated to result in a net temporary increase of income and employment in the Delta

⁸ Under the Sacramento-San Joaquin Delta Reform Act of 2009 (85089), construction of a new conveyance facility
cannot begin until "the persons or entities that contract to receive water from the State Water Project and the
federal Central Valley Project or a joint powers authority representing those entities have made arrangements or
entered into contracts to pay for... (b) Full mitigation of property tax or assessments levied by local governments or
special districts for land used in the construction, location, mitigation, or operation of new Delta conveyance
facilities."
region. This would also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Under Alternative 4, construction of water conveyance facilities would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the construction period, property tax and assessment revenue forgone is estimated at $8.2 million. However, the Sacramento-San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** As described and defined in Chapter 15, *Recreation*, 15.3.3.9, Impacts REC-1 through REC-4, construction of water conveyance facilities under Alternative 4 would include elements that would be permanently located in two existing recreation areas. Additionally, substantial disruption of other recreational activities considered temporary and permanent would occur in certain areas during the construction period. The quality of recreational activities including boating, fishing, waterfowl hunting, and hiking in the Delta could be affected by noise, lighting, traffic, and visual degradation in proximity to water conveyance construction. For example, in-water construction activities associated with the intakes or temporary barge areas could restrict navigation and create noise and vibration that could lead to lower fishing success rates. Were it to occur, a decline in visits to Delta recreational sites as a result of facility construction would be expected to reduce recreation-related spending, creating an adverse effect throughout the Delta region. Additionally, if construction activities shift the relative popularity of different recreational sites, the BDCP may carry localized beneficial or adverse effects.

Access would be maintained to all existing recreational facilities, including marinas, throughout construction. As part of Mitigation Measure REC-2, BDCP proponents would enhance nearby fishing access sites and would incorporate public recreational access into design of the intakes along the Sacramento River. Implementation of this measure along with separate, non-environmental commitments as set forth in Appendix 3B, *Environmental Commitments*, relating to the enhancement of recreational access and control of aquatic weeds in the Delta would reduce these effects.

Environmental commitments would also be implemented to reduce some of the effects of construction activities upon the recreational experience. These include providing notification of maintenance activities in waterways and developing and implementing a noise abatement plan, as described in Appendix 3B, *Environmental Commitments*. Similarly, mitigation measures proposed throughout other chapters of this document, and listed under Impact REC-2 in Chapter 15, *Recreation*, would also contribute to reducing construction effects on recreational experiences in the study area. These include Chapter 12, *Terrestrial Biological Resources*, Chapter 17, *Aesthetics and Visual Resources*, Chapter 19, *Transportation*, and Chapter 23, *Noise*. 
Construction of water conveyance structures would be anticipated to result in a lower-quality recreational experience in a number of localized areas throughout the Delta, despite the implementation of environmental commitments. With a decrease in recreational quality, particularly for boating and fishing (two of the most popular activities in the Delta), the number of visits would be anticipated to decline, at least in areas close to construction activities. Under this alternative, areas of the Cosumnes River Preserve on Staten Island would be affected by the construction of tunnels and associated activities, including processing and storage of RTM. While RTM areas are considered permanent surface impacts for the purposes of impact analysis, it is anticipated that the RTM would be removed from these areas and reused, as appropriate, as bulking material for levee maintenance, as fill material for habitat restoration projects, or other beneficial means of reuse identified for the material, as described in Appendix 3B, Environmental Commitments. In the Clifton Court Forebay, permanent siphons, canals, forebay embankment areas, a control structure, and a forebay overflow structure would be built. There are no formal recreation facilities at Clifton Court Forebay, although well-established recreation, mostly fishing and hunting, takes place at the southern end of the forebay along the embankment. This access would be lost during construction, but once new embankments are built, recreation could again occur. Six other recreational sites or areas would experience periods of construction-related effects, including noise, access, visual disturbances, or a combination of these effects. As described in Chapter 15, Recreation, 15.3.3.9, Impact REC-2, these include Clarksburg Boat Launch (fishing access), Stone Lakes National Wildlife Refuge, Wimpy’s Marina, Westgate Landing Park, Delta Meadows River Park, and Bullfrog Landing Marina. Fewer visits to these sites or areas would lead to less spending, creating an adverse effect. While visitors can adjust their recreational patterns to avoid areas substantially affected by construction activities (by boating or fishing elsewhere in the Delta, for instance), recreation-dependent businesses including marinas and recreational supply retailers may not be able to economically weather the effects of multiyear construction activities and may be forced to close as a result, even while businesses in areas that become more popular could benefit. Overall, the multiyear schedule and geographic scale of construction activities and the anticipated decline in recreational spending would be considered an adverse effect. The commitments and mitigation measures cited above would contribute to the reduction of this effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities under Alternative 4 could impact recreational revenue in the Delta region if construction activities result in fewer visits to the area. Fewer visits would be anticipated to result in decreased economic activity related to recreational activities. This section considers only the economic effects of recreational changes brought about by construction of the proposed water conveyance facilities. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.9, Impacts REC-1 through REC-4.

**Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Construction of conveyance facilities would convert land from existing agricultural uses to uses that include direct facility footprints, construction staging areas, borrow/spoil areas, RTM storage, temporary and permanent roads, and utilities. Agricultural land could also be affected by changes in water quality and other conditions that would affect crop productivity. These direct effects on agricultural land are described in Chapter 14, Agricultural Resources, Section 14.3.3.9, Impacts AG-1 and AG-2.
Changes in crop acreage were used to describe the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, Environmental Setting/Affected Environment. Table 16-43 summarizes the changes in acreage and value of agricultural production that would result in the Delta region as a result of Alternative 4 construction. Changes are shown relative to the Existing Conditions and the No Action Alternative by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The table also includes a summary of changes in crop acreages that are reported in greater detail in Appendix 14A, Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction.

Total value of irrigated crop production in the Delta would decline on average by $5.2 million per year during the construction period, with total irrigated crop acreage declining by about 5,600 acres. These estimates are not dependent on water year type.

**Table 16-43. Crop Acres and Value of Agricultural Production in the Delta during Construction (Alternative 4)**

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 4</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>478.1</td>
<td>-5.6</td>
</tr>
<tr>
<td>Grains</td>
<td>58.1</td>
<td>-0.6</td>
</tr>
<tr>
<td>Field crops</td>
<td>188.4</td>
<td>-2.7</td>
</tr>
<tr>
<td>Forage crops</td>
<td>111.2</td>
<td>-1.6</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>76.8</td>
<td>-0.4</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>43.7</td>
<td>-0.3</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>644.8</td>
<td>-5.2</td>
</tr>
<tr>
<td>Grains</td>
<td>24.0</td>
<td>-0.2</td>
</tr>
<tr>
<td>Field crops</td>
<td>112.2</td>
<td>-1.7</td>
</tr>
<tr>
<td>Forage crops</td>
<td>72.0</td>
<td>-1.1</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>267.3</td>
<td>-1.0</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>169.2</td>
<td>-1.3</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).

Alternative 4 may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints and longer travel times due to facilities construction. Construction designs and costs have provided for such costs in two ways. In most cases, affected lands fall within the facilities footprint, and are included in the agricultural acreage and value of production described elsewhere in this chapter and in Chapter 14, Agricultural Resources, Section 14.3.3.9, Impacts AG-1 and AG-2. For potentially affected lands not included in the facilities footprint, conveyance construction costs include temporary and permanent roads, bridges, and other facilities as needed to service agricultural lands (California Department of Water Resources 2010a, 2010b). There could be some additional travel time and other costs associated with using these facilities, but such costs are not environmental impacts requiring mitigation.

Loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction. The value of structures and equipment potentially affected would
Socioeconomics vary widely across parcels. Much of the equipment is portable (e.g., machinery, tools, portable sprinkler pipe), and could be sold or used on other lands. Shop and storage buildings and permanent irrigation and drainage equipment plus orchards and vineyards may have little or no salvage value. The negotiated purchase of lands for the conveyance and associated facilities would compensate for some, but perhaps not all of that value. According to Cooperative Extension cost of production studies (University of California Cooperative Extension 2003a, 2003b, 2004, 2005, 2006a, 2006b, 2007a, 2007b, 2008a, 2008b, 2008c, 2008d), permanent structures, irrigation systems, and drainage systems can represent a wide range of investment, from less than $100 per acre for field and vegetable crops up to over $3,000 per acre for some orchards. Most such investments would not be new, so their depreciated values would be substantially lower.

Investment in standing orchards and vineyards would also be considered during negotiations for land purchases. Typical investments required to bring permanent crops into production are shown in Section 16.1, Environmental Setting/Affected Environment. For example, the establishment of wine grapes requires an investment of over $15,000 per acre and Bartlett pears require over $20,000 per acre. Forage crops such as irrigated pasture and alfalfa may require an establishment cost of about $400 per acre. The depreciated values of the growing stock could be substantially below these establishment costs, depending on the ages of the stands that would be affected.

Only minor changes in salinity of agricultural water supply are expected during construction. Consequently, costs related to salinity changes would also be minor. Further discussion of effects from changes in salinity is presented in Chapter 14, Agricultural Resources, Section 14.3.3.9, Impacts AG-1 and AG-2.

**NEPA Effects:** Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.8, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

In the Delta region, ongoing operation and maintenance of BDCP facilities would result in increased expenditures relative to the Existing Conditions and the No Action Alternative (regional economic conditions do not differ across Existing Conditions and No Action Alternative). The increased project
operation and maintenance expenditures are expected to result in a permanent increase in regional employment and income, including an estimated 129 direct and 183 total (direct, indirect, and induced) FTE jobs (Table 16-44), relative to the Existing Conditions and the No Action Alternative. Potential changes in the value of agricultural production result in changes to regional employment and income in the Delta region under the Alternative 4 relative to the Existing Conditions and the No Action Alternative.

Table 16-44. Regional Economic Effects on Employment and Labor Income in the Delta Region during Operations and Maintenance (Alternative 4)

<table>
<thead>
<tr>
<th>Regional Economic Impact</th>
<th>Impacts from Operations and Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment (FTE)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>129</td>
</tr>
<tr>
<td>Totalb</td>
<td>183</td>
</tr>
<tr>
<td><strong>Labor Income (million $)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>7.8</td>
</tr>
<tr>
<td>Totalb</td>
<td>10.3</td>
</tr>
</tbody>
</table>

Note: Labor income is reported in 2011 dollars (U.S. Department of Commerce 2012).

a IMPLAN results are changes relative to Existing Condition or No Action Alternative.

b Includes direct, indirect & induced effects.

The operation and maintenance of conveyance and related facilities such as roads and utilities would result in the permanent removal of agricultural land from production following construction, and the effects on employment and income would be negative, including the loss of an estimated 12 agricultural and 41 total (direct, indirect, and induced) FTE jobs. The regional economic effects on employment and income in the Delta region from the change in agricultural production are reported in Table 16-45. Mapbook Figures M14-7 and M14-8 display areas of Important Farmland and lands under Williamson Act contracts that could be converted to other uses due to the construction of water conveyance facilities for the Modified Pipeline/Tunnel alignment. Note that not all of these structures would be constructed under this alternative.

Table 16-45. Regional Economic Effects on Agricultural Employment and Labor Income during Operations and Maintenance (Alternative 4)

<table>
<thead>
<tr>
<th>Regional Economic Impact</th>
<th>Impacts on Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment (FTE)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-12</td>
</tr>
<tr>
<td>Totalb</td>
<td>-41</td>
</tr>
<tr>
<td><strong>Labor Income (million $)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-1.2</td>
</tr>
<tr>
<td>Totalb</td>
<td>-2.4</td>
</tr>
</tbody>
</table>

Note: Labor income is reported in 2011 dollars (U.S. Department of Commerce 2012).

a IMPLAN results are changes relative to Existing Condition or No Action Alternative.

b Includes direct, indirect & induced effects.
**NEPA Effects:** Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would increase total employment and income in the Delta region. The net change would result from expenditures on operation and maintenance and from changes in agricultural production. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.9, Impacts AG-3 and AG-4; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.9, Impacts REC-5 through REC-8. When required, DWR would provide compensation to landowners as a result of acquiring lands for the proposed conveyance facilities. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**Population**

Operations and maintenance of conveyance facilities would require approximately 130 permanent new workers. Given the nature of those operation and maintenance jobs, the existing water conveyance facilities already in the five-county region, the large workforce in the region, and the large water agencies with headquarters in that region, it is anticipated that most of these new jobs would be filled from within the existing five-county labor force. However, operation and maintenance may require specialized worker skills not readily available in the local labor pool. As a result, it is anticipated that workers with specialized skills may be recruited from outside the five-county region.

It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Changes in demand for public services resulting from any increase in population are addressed in Chapter 20, *Public Services and Utilities*, Section 20.3.3.9, Impact UT-7.

**Housing**

It is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing.
There are about 53,000 housing units available to accommodate any nonlocal workers who relocate to the five-county region. In addition, new residents would likely be dispersed across the region, thereby not creating a burden on any one community. As a result, operation and maintenance of the proposed conveyance facilities is not expected to increase the demand for housing.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population and therefore significant changes in the physical environment are not anticipated.

**Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Throughout the five-county Delta region, population and employment could slightly expand as a result of continued operation and maintenance of the water conveyance facilities. Agricultural contributions to the character and culture of the Delta would be likely to decline commensurate with the projected decline in agricultural-related employment and production. This could result in the closure of agriculture-dependent businesses or those catering to agricultural employees, particularly in areas where conversion of agricultural land would be most concentrated, including near the intake pumping plants and forebays in the vicinity of Clarksburg and Hood. Similar effects could accrue to areas disproportionately dependent upon existing recreational activities. However, influences associated with those hired to operate, repair, and maintain water conveyance facilities would grow. To the extent that this anticipated economic shift away from agriculture results in demographic changes in population, employment level, income, age, gender, or race, the study area would be expected to see changes to its character, particularly in those Delta communities most substantially affected by demographic changes based on their size or proximity to BDCP facilities.

While some of the rural qualities of Delta communities, including relatively low noise and traffic levels, could return to near pre-construction conditions during the operational phase, other effects would be lasting. For instance, the visual appearance of intakes and other permanent features would compromise the predominantly undeveloped and agricultural nature of communities like Clarksburg, Courtland, and Hood, which would be located closest to the permanent water conveyance features. Lasting effects on areas made less desirable in which to live, work, shop, or participate in recreational activities as a result of BDCP operations could lead to localized abandonment of buildings. Such lasting effects could also result in changes to community cohesion if they were to restrict mobility, reduce opportunities for maintaining face-to-face relationships, or disrupt the functions of community organizations or community gathering places (such as schools, libraries, places of worship, and recreational facilities). While ongoing operations could result in beneficial effects relating to the economic welfare of a community, adverse social effects could linger in communities closest to character-changing effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, *Environmental Commitments*). Specifically, these commitments include Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, and Prepare and Implement Mosquito Management Plans.
**CEQA Conclusion:** Operation and maintenance of water conveyance facilities under Alternative 4 could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-8 and in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

**Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Effects on tax revenue as a result of ongoing water conveyance operations under Alternative 4 would be similar to those described under Alternative 1A, Impact ECON-10. However, with the construction of fewer intake facilities and a modified alignment, forgone revenue is estimated at $49.3 million over the 50-year permit period. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the BDCP. This economic effect would be adverse; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for constructing, locating, operating, or mitigating for new Delta water conveyance facilities. Additionally, as discussed under Impact ECON-7, continued operation and maintenance of the water conveyance facilities would be anticipated to result in a net increase of income and employment in the Delta region. This could also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Under Alternative 4, the ongoing operation and maintenance of water conveyance facilities would restrict property tax revenue levels for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated at $49.3 million. However, the Sacramento-San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** As discussed in Chapter 15, *Recreation*, Section 15.3.3.9, Impacts REC-5 through REC-8, operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 4 are anticipated to create minor effects on recreational resources. Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. As discussed in Impact REC-7, most intake maintenance, such as painting, cleaning, and repairs, would be done with barges and divers, and could cause a temporary impediment to boat movement in the Sacramento River in the
immediate vicinity of the affected intake structure and reduce opportunities for waterskiing, wakeboarding, or tubing in the immediate vicinity of the intake structures. However, boat passage and navigation on the river would still be possible around any barges or other maintenance equipment and these effects would be expected to be short-term (2 years or less). Although water-based recreation (i.e. boating, waterskiing, wakeboarding, etc.) may be restricted at and in the vicinity of intakes, many miles of the Sacramento River would still be usable for these activities during periodic maintenance events. Additionally, implementation of the environmental commitment to provide notification of construction and maintenance activities in waterways (Appendix 3B, Environmental Commitments) would reduce these effects. Because effects of facility maintenance would be short-term and intermittent, substantial economic effects are not anticipated to result from operation and maintenance of the facilities.

**CEQA Conclusion:** Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 4 are anticipated to create minor effects on recreational resources and therefore, are not expected to substantially reduce economic activity related to recreational activities. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.9, Impacts REC-5 through REC-8.

**Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

During operation and maintenance of conveyance facilities existing agricultural land would be in uses that include direct facility footprints and associated permanent roads and utilities. Agricultural land could also be affected by changes in water quality and other conditions that would affect crop productivity. These direct effects on agricultural land are described in Chapter 14, Agricultural Resources, Section 14.3.3.9, Impacts AG-1 and AG-2.

Changes in crop acreage were used to estimate the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, Environmental Setting/Affected Environment. Table 16-46 summarizes the changes in acreage and value of agricultural production that would result in the Delta region during operation of Alternative 4. Changes are shown relative to the Existing Conditions and the No Action Alternative by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The changes in crop acreages are reported in greater detail in Appendix 14A, Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction.

Total value of irrigated crop production in the Delta region would decline on average by $3.8 million per year during operation and maintenance, with total irrigated crop acreage declining by about 4,500 acres. These estimates are not dependent on water year type.
Table 16-46. Crop Acres and Value of Agricultural Production in the Delta during Operations and Maintenance (Alternative 4)

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 4</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>479.2</td>
<td>-4.5</td>
</tr>
<tr>
<td>Grains</td>
<td>58.2</td>
<td>-0.4</td>
</tr>
<tr>
<td>Field crops</td>
<td>188.7</td>
<td>-2.4</td>
</tr>
<tr>
<td>Forage crops</td>
<td>111.4</td>
<td>-1.3</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>76.9</td>
<td>-0.2</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>43.8</td>
<td>-0.2</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>646.3</td>
<td>-3.8</td>
</tr>
<tr>
<td>Grains</td>
<td>24.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>Field crops</td>
<td>112.4</td>
<td>-1.5</td>
</tr>
<tr>
<td>Forage crops</td>
<td>72.2</td>
<td>-0.9</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>267.8</td>
<td>-0.6</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>169.8</td>
<td>-0.7</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).

Alternative 4 may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be associated with operational constraints and longer travel times due to permanent facilities. In most cases, affected lands fall within the facilities footprint, and are included in the agricultural acreage and value of production described elsewhere in this Chapter and in Chapter 14, Agricultural Resources, Section 14.3.3.9.

Crop yields and crop selection on lands in the Delta could be affected by changes in salinity of agricultural water supply during operation and maintenance activities. If operation of the proposed conveyance facilities increases salinity in part of the Delta, crops that are more sensitive to salinity could shift to other lands in the five-county Delta region. See Chapter 14, Agricultural Resources, Section 14.3.3.9, Impact AG-2, for further discussion of effects from changes in salinity.

**NEPA Effects:** The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** During operation and maintenance of the proposed water conveyance facilities the value of agricultural production in the Delta region would be reduced. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.9, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical effect. Measures to reduce these impacts are
discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. The effects on the economy of the Delta region would be similar in kind, though not in magnitude, to those estimated for conveyance features and facilities. In general, the changes in regional economic activity (employment and income) would include increases from the construction and operation and maintenance-related activity, declines resulting from agricultural or other land uses converted or impaired, changes in recreation spending that could be positive or negative depending on the specific restoration action, and declines from abandonment of natural gas wells.

The Yolo Bypass Flood Date and Flow Volume Agricultural Impact Analysis, a report created for Yolo County, evaluates the expected losses of agricultural employment that could result from implementing CM2 (Howitt et al. 2012) (see Chapter 3, Description of Alternatives, Section 3.6.2, for a description of conservation measures). CM2 would lower a portion of the Fremont Weir to allow Sacramento River water to flow into the Yolo Bypass to reduce migratory delays for fish and enhance fish rearing habitat. However, it may also translate into financial losses for farmers and the regional economy. Annual reductions in agricultural employment under the CM2 scenario are expected to range from 9 FTE at 3,000 cfs to 21 FTE at 6,000 cfs.

As discussed in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5, operations of natural gas wells in the Delta region would be affected where wells are located in restoration areas to be inundated under Conservation Measures 4, 5, and 10. In areas that would be permanently inundated under these conservation measures, producing natural gas wells may be abandoned. There are approximately 233 active wells in these areas (Table 26-5 in Chapter 26, Mineral Resources); an unknown number of these wells would likely be abandoned. (Specific inundation areas have not been identified for Conservation Measures 2-22 at this time, and there is potential for some of these wells to be modified and to remain in production.) In permanently flooded areas, the active wells could be relocated and replaced using conventional or directional drilling techniques at a location outside of inundation zones to maintain production. However, if a large number of wells had to be abandoned and could not be redrilled, there could be an adverse effect related to the permanent elimination of employment and income generated by well monitoring and maintenance activities. Generally, small crews perform ongoing monitoring and maintenance of several wells at a time. Assuming none of the wells in inundation areas are redrilled, the abandonment of 233 natural gas wells would represent 37 percent of the 629 producing wells in the Delta region (see active producer, dual, and new wells in Table 26-2 in Chapter 26, Mineral Resources). According to 2011 data available through the U.S. Census Bureau’s 2011 County Business Patterns report (2013), an estimated 255-310 jobs are supported by the two sectors of the Delta region economy that could be affected by well abandonment: crude petroleum and natural gas extraction, and support activities for oil and gas operations. (Note that these jobs include non-natural gas production jobs and non-operations and maintenance jobs, so the number of jobs solely related to operations and maintenance of natural gas wells would be smaller.) Assuming a worst-case scenario in which the loss of 37 percent of the Delta region’s natural gas wells would result in the loss of a similar
percentage of the region’s employment in these two sectors, an estimated 95-115 jobs would be lost as the result of implementing Conservation Measures 4, 5, and 10. However, considering that this estimate is high and that some wells would be relocated, the actual job losses probably would be somewhat lower.

**NEPA Effects**: Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related and natural gas production-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, measures to reduce impacts on natural gas wells are discussed in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5.

**CEQA Conclusion**: Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.9, Impacts AG-3 and AG-4; changes in recreation-related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.9, Impacts REC-9 through REC-11; abandonment of natural gas wells is addressed in Chapter 26, *Mineral Resources*, Section 26.3.3.9, Impact MIN-5. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts and impacts on natural gas wells are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5.

**Impact ECON-14**: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

**NEPA Effects**: In the Delta region, implementation of Conservation Measures 2–22 would increase employment and convert land from existing uses, including possible displacement of residential housing and business establishments. The effects on population and housing in the Delta region would be similar in kind, though not in magnitude, to those estimated for conveyance features and facilities. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired. Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion**: Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22.
Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes in the physical environment are not anticipated to result.

Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: As noted under Impacts ECON-13, and ECON-14, conservation measures designed to restore, conserve, or enhance natural habitat would be anticipated to create economic effects similar in kind, if not in magnitude, to those described for the water conveyance facilities, including increases to employment and changes in land use that could trigger the disruption of agricultural and recreational economies. They could also affect the possible displacement of residences and businesses. The effects these activities would create with regard to community character would depend on the nature of each measure along with its specific location, size, and other factors that are not yet defined.

Under Alternative 4, temporary construction associated with implementation of these measures could lead to demographic changes and resulting effects on the composition and size of Delta communities. Earthwork and site preparation associated with conservation measures could also detract from the rural qualities of the Delta region; however, their implementation would take place in phases over the 50-year permit period, which would limit the extent of effects taking place at any one point in time.

Implementation of these measures could also alter community character over the long term. Conversion of agricultural land to restored habitat would result in the erosion of some economic and social contributions stemming from agriculture in Delta communities. However, in the context of the Delta region, a substantial proportion of land would not be converted. Additionally, restored habitat could support some rural qualities, particularly in terms of visual resources and recreational opportunities. These effects could attract more residents to some areas of the Delta, and could replace some agricultural economic activities with those related to recreation and tourism. To the extent that agricultural facilities and supportive businesses were affected and led to vacancy, alteration of community character could result from these activities. However, the cultivated lands natural community strategy of CM3 would ensure the continuation of agricultural production on thousands of acres in the Delta (see Chapter 3, Description of Alternatives, Section 3.6.2, for a description of conservation measures).

While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise in those communities closest to character-changing effects and those most heavily influenced by agricultural activities. Noise, visual effects, air pollution, and traffic associated with earthwork and site preparation for the restoration, enhancement, protection, and management of various natural community types could alter the rural characteristics of Delta communities, where they occur in close proximity to these communities. Additionally, changes in the extent and nature of regional agricultural and recreational activities could also be anticipated to alter the character of communities in the Delta and result in changes to community cohesion. If necessary, implementation of mitigation measures and environmental commitments related to transportation, agriculture, and recreation would be anticipated to reduce these adverse effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 under Alternative 4 could affect community character within the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character are related to physical impacts involving population growth, these impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in decay and blight stemming from a lack of maintenance, upkeep, and general investment.

**Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing the Proposed Conservation Measures 2–22**

As discussed in relation to construction of water conveyance facilities, habitat restoration and implementation of Conservation Measures 2–22 under Alternative 4 would also take place, in part, on land held by private owners and from which local governments derive revenue through property taxes and assessments. In particular, conservation measures related to protection of natural communities (CM3) and restoration of tidal habitat (CM4), seasonally inundated floodplain (CM5), grassland communities (CM8), vernal pool complex (CM9), and nontidal marsh (CM10) would require the acquisition of multiple parcels of land (see Chapter 3, *Description of Alternatives*, Section 3.6.2, for a description of conservation measures).

The *Yolo Bypass Flood Date and Flow Volume Agricultural Impact Analysis*, as described under Impact ECON-13, evaluates the expected losses of total Yolo County revenue and state tax revenue for implementing CM2 (Howitt et al. 2012) (see Chapter 3, *Description of Alternatives*, Section 3.6.2, for a description of conservation measures). The total expected annual losses in state and local tax revenues under the CM2 proposed inundation scenarios can range from $.057 million under the 3,000 cfs flow scenario to $.13 million under the 6,000 cfs flow scenario that extends flooding as late as May 15.

The loss of a substantial portion of an entity's tax base would represent an adverse effect on an agency, resulting in a decrease in local government's ability to provide public goods and services. Under Alternative 4, property tax and assessment revenue forgone as a result of conservation measure implementation is estimated to reach $176.7 million over the BDCP’s 50-year permit period (in 2012 undiscounted dollars; see BDCP Chapter 8, *Implementation Costs and Funding Sources*, Table 8-28 for further detail). Decreases in revenue could potentially represent a substantial share of individual agency tax bases, particularly for smaller districts affected by large, contiguous areas identified for habitat restoration.

Additionally, other conservation measures related to control of invasive species, expansion of fish hatchery facilities, installation of non-physical fish barriers, modification of water diversions, or treatment of urban stormwater may also require that land currently on property tax rolls be acquired and eventually removed from the tax base. The fiscal effects stemming from these conservation measures are, however, anticipated to be minor based upon the relatively small areas of land necessary for their implementation.

**NEPA Effects:** Overall, Conservation Measures 2–22 would remove many acres of private land from local property tax and assessment rolls. This economic effect would be considered adverse;
however, the BDCP proponents would offset forgone property tax and assessments levied by local
governments and special districts on private lands converted to habitat. As described under Impact
ECON-13, regional economic effects from the implementation of Conservation Measures 2–22 would
be mixed. While activities associated with construction and establishment of habitat areas could
boost regional expenditures and sales tax revenue, reduced agricultural activities may offset these
gains. Changes in recreation spending and related sales tax revenue could be positive or negative,
depending on the implementation of the measures.

**CEQA Conclusion:** Under Alternative 4, implementation of Conservation Measures 2–22 would
result in the removal of a portion of the property tax base for various local government entities in
the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is
estimated to reach $176.7 million, compared with annual property tax revenue of more than $934
million in the Delta counties (California State Controller’s Office 2012). Projected over the 50-year
period, these removals would likely represent less than 1% of these counties’ property tax revenue.
However, the BDCP proponents would compensate local governments and special districts for
forgone revenue. CEQA does not require a discussion of socioeconomic effects except where they
would result in physical changes. If an alternative is not anticipated to result in a physical change to
the environment, it would not be considered to have a significant impact under CEQA (CEQA
Guidelines Sections 15064(f) and 15131).

**Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the
Proposed Conservation Measures 2–22**

**NEPA Effects:** Implementation of the Conservation Measures 2–22 under this alternative would be
anticipated to create an adverse effect on recreational resources by limiting access to facilities,
restricting boat navigation and disturbing fish habitat while restoration activities are taking place.
These measures may also permanently reduce the extent of upland recreation sites. However, over
the 50-year permit period, these components could also create beneficial effects by enhancing
aquatic habitat and fish abundance, expanding the extent of navigable waterways available to
boaters, and improving the quality of existing upland recreation opportunities. Therefore, the
potential exists for the creation of adverse and beneficial effects related to recreational economics.
Adverse effects would be anticipated to be primarily limited to areas close to restoration areas and
during site preparation and earthwork phases. These effects could result in a decline in visits to the
Delta and reduction in recreation-related spending, creating an adverse economic effect throughout
the Delta. Beneficial recreational effects would generally result during later stages of the BDCP
permit period as Conservation Measures 2–22 are implemented and environmental conditions
supporting recreational activities are enhanced. These effects could improve the quality of
recreational experiences, leading to increased economic activities related to recreation, particularly
in areas where conservation measure implementation would create new recreational opportunities.

**CEQA Conclusion:** Site preparation and earthwork activities associated with a number of
conservation measures would limit opportunities for recreational activities where they occur in or
near existing recreational areas. Noise, odors, and visual effects of construction activities would also
temporarily compromise the quality of recreation in and around these areas, leading to potential
economic impacts. However, over time, implementation could improve the quality of existing
recreational opportunities, leading to increased economic activity. This section considers only the
economic effects of recreational changes brought about by conservation measure implementation.
CEQA does not require a discussion of socioeconomic effects except where they would result in
reasonably foreseeable physical changes. Potential physical changes to the environment relating to
recreational resources are described and evaluated in Chapter 15, *Recreation*, Section 15.3.3.9, Impacts REC-9 through REC-11.

**Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22**

**NEPA Effects:** Conservation Measures 2–22 would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14, *Agricultural Resources*, Section 14.3.3.9, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents would provide compensation to property owners for losses due to implementation of the alternative. Because implementation of the Conservation Measures 2–22 would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

The *Yolo Bypass Flood Date and Flow Volume Agricultural Impact Analysis*, as described in Impact ECON-13, also evaluates the expected losses in gross farm revenue that could result from implementing CM2 (Howitt et al. 2012) (see Chapter 3, *Description of Alternatives*, Section 3.6.2, for a description of conservation measures). Direct gross farm revenue losses are expected to be less than $1.5 million per year. Total output value (gross farm revenue) expected losses for the CM2 scenario, which corresponds to supplemental releases only in years where natural flooding occurs, range from $1.2 to $2.8 million per year. Expected losses are zero in years when there is no natural flooding and substantial in years when there is late natural flooding. Expected loss estimates are sensitive to changes in area inundated, yield loss and crop prices. It assumed that the costs of production in the Bypass remain constant even with late flooding; however, if production costs go up, for example, due to overtime labor or increased preparation costs, loss estimates would increase.

The report also evaluates the loss to total value added, or the net value of agricultural production in the Yolo Bypass to the Yolo County economy. Recognizing that many inputs/outputs are produced or consumed outside of Yolo County, those factors are not considered in the analysis. For example, total value added does include compensation for employees, income to business and landowners, and other business specific to Yolo County, but does not include food production that is exported out of the county. A proportion of Yolo Bypass production and crop consumption occurs within Yolo County; therefore, the expected annual losses to value added for Yolo County is expected to range from $0.63 to $1.5 million per year.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.9, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would
reduce the severity of economic effects related to the loss of agricultural land, it would not
constitute mitigation for any related physical impact. Measures to reduce these impacts are
discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly
Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for
loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security
Zones.

Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions

As described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2, the
operational components of BDCP Conservation Measure 1 could result in a number of effects in
areas receiving SWP and CVP water deliveries outside of the Delta.

Changes in the amount, cost, or reliability of water deliveries could create socioeconomic effects in
the hydrologic regions. To the extent that unreliable or insufficient water supplies currently
represent obstacles to agricultural production, Alternative 4 may support more stable agricultural
activities by enabling broader crop selection or by reducing risk associated with uncertain water
deliveries. As a result of an increase in water supply and supply reliability, farmers may choose to
leave fewer acres fallow and/or plant higher-value crops. While the locations and extent of any
increases in production would depend on local factors and individual economic decisions, a general
increase in production would be anticipated to support growth in seasonal and permanent on-farm
employment, along with the potential expansion of employment in industries closely associated
with agricultural production. These include food processing, agricultural inputs, and transportation.

In contrast, decreased water deliveries may affect socioeconomics in hydrologic regions through
mechanisms similar to those described above; however, the effects would generally be reversed. For
example, it is reasonable to expect that reduced or less reliable water deliveries would result in
decreased agricultural production and, in turn, a reduction in both direct and indirect agricultural
employment. Economic and social patterns tied to predominant agricultural industrial activities and
land uses could erode, changing the character of agricultural communities in hydrologic regions. If
operation of water conveyance facilities under Alternative 4 reduced M&I deliveries to the extent
that it would, in the long run, constrain population growth, its implementation could reinforce a
socioeconomic status quo or limit potential economic and employment growth in hydrologic
regions. A detailed discussion of these potential effects is found in Appendix 5B, Responses to
Reduced South of Delta Water Supplies. Such changes to agricultural production and population
growth with its associated economic activity could also lead to shifts in the character of
communities in the hydrologic regions with resultant beneficial or adverse effects.

Generally, these effects (both beneficial and adverse) would be most concentrated in hydrologic
regions where agriculture is a primary industry and where agricultural operations depend most
heavily on SWP and CVP deliveries.

Changes in SWP Deliveries Compared to No Action Alternative

Based on Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.3, compared to
the No Action Alternative (2060), implementation of operational Scenario H1 under Alternative 4
would increase SWP deliveries to all hydrologic regions except for the San Joaquin River Region,
which would experience no change in deliveries. Compared to No Action Alternative (2060), the
South Coast Region would receive the largest net increase in deliveries under Scenario H1 (up to 251
TAF of Table A plus Article 21 deliveries) among the regions, which represents 55% of the net increase.
Changes in CVP Deliveries Compared to No Action Alternative

The operational scenarios under Alternative 4 would not change CVP M&I deliveries for the Sacramento River, South Coast, South Lahontan and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to the No Action Alternative (2060), Scenario H1 would increase CVP deliveries to the other hydrologic regions. San Francisco Bay is projected to receive the largest potential increase (5 TAF) among the affected hydrologic regions. Compared to the No Action Alternative (2060), Scenario H4 would also increase deliveries to the other hydrologic regions and San Francisco Bay is projected to receive the largest potential increase (2 TAF) among the affected hydrologic regions. The other two operational scenarios (H2 and H3) would have effects that would fall within the range of Scenario H1 and Scenario H4 (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-16, for more information).

NEPA Effects: Increases in average annual water deliveries to service areas could induce population growth and new housing to accommodate growth. Such deliveries could also provide support for water-intensive industries. As discussed in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.5, long-term water supply reliability is an important component in enabling long-term population increases. However, other factors—including natural growth, employment opportunities, local policy, and quality of life—are more likely to determine population growth. Nonetheless, population growth could stimulate economic activity resulting from increased demand for goods and services. This increased demand could create broad economic benefits for regions whose growth is supported by increased deliveries under BDCP.

Social changes, including changes in community character, could also result from an expansion in population or economic activity linked to changes in water deliveries. For example, more stable agricultural production and associated economic activities in areas where agriculture is a predominant industry could strengthen and reinforce existing economic and social patterns and institutions. Increased production could also intensify existing socioeconomic challenges, including seasonal cycles in employment, housing demand, and provision of social services. In areas where population growth would be enabled by increased water supplies or reliability, changes to community character could result from an increased population, including the potential for changes in urban form, environmental factors such as traffic or noise, demographic composition, or the rise of new or broader economic or social opportunities. Again, the nature and extent of such changes would be predominantly influenced by prevailing socioeconomic forces, rather than any specific change associated with implementation of the BDCP.

Changes in agricultural production and population growth could also affect local government fiscal conditions. Population growth would be anticipated to result in higher property and sales tax revenue while increased agricultural activity could result in higher sales tax receipts for a local
jurisdiction. However, growth would also require expanded public services to meet the needs of a larger population and a larger economic base. Expansion could require additional spending on education, police and fire protection, medical services, and transportation and utility infrastructure. Whether such growth would result in a long-term net benefit or cost would depend on a number of factors including prevailing local service levels and tax rates, as well as the characteristics of the growth.

Changes in water deliveries associated with operation of Alternative 4 could result in beneficial or adverse socioeconomic effects in areas receiving water from the SWP and CVP. In hydrologic regions where water deliveries are predicted to increase when compared with the No Action Alternative, more stable agricultural activities could support employment and economic production associated with agriculture. Where M&I deliveries increase, population growth could lead to general economic growth and support water-intensive industries. Such changes could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, growth associated with deliveries could require additional expenditures for local governments while also supporting increases in revenue.

**CEQA Conclusion:** As described above, the operational components of BDCP Conservation Measure 1 could result in a number of effects in areas receiving SWP and CVP water deliveries outside of the Delta.

### Changes in SWP Deliveries Compared to Existing Conditions

Compared to Existing Conditions, Scenario H1 would increase deliveries to all hydrologic regions except for the San Joaquin River Region, which would experience no change in deliveries. Compared to Existing Conditions, under Scenario H1, South Coast would receive the largest net increase in deliveries (up to 189 TAF of Table A deliveries) among the regions, which represents 57% of the net increase in M&I deliveries. Compared to Existing Conditions, Scenario H4 would decrease deliveries to all hydrologic regions except for the Tulare Lake Region, which would receive an increase and the San Joaquin River Region, which would experience no change in deliveries. Compared to Existing Conditions, under Scenario H4, South Coast would receive the largest net decrease in deliveries (a decrease of up to 170 TAF of Table A deliveries) among the regions while Tulare Lake would receive the only net increase in deliveries (up to 52 TAF of Table A plus Article 21 deliveries) among the regions. The other two operational scenarios (H2 and H3) would have effects that would fall within the range of Scenario H1 and Scenario H4 (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-16, for more information).

### Changes in CVP Deliveries Compared to Existing Conditions

The operational scenarios under Alternative 4 would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan and Colorado River regions because there are no affected CVP contractors located in these regions. Compared to Existing Conditions, Scenario H1 would decrease deliveries to the other hydrologic regions. San Francisco Bay is projected to receive the largest potential decrease (2 TAF) among the affected hydrologic regions. Compared to Existing Conditions, Scenario H4 would also decrease deliveries to the other hydrologic regions. San Francisco Bay is projected to receive the largest potential decrease (5 TAF) among the affected hydrologic regions. The other two operational scenarios (H2 and H3) would have effects that would fall within the range of Scenario H1 and Scenario H4 (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-17 for more information).
1. **Summary**

Operation of water conveyance facilities under Alternative 4 could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.

16.3.3.10 **Alternative 5—Dual Conveyance with Pipeline/Tunnel and Intake 1 (3,000 cfs; Operational Scenario C)**

Facilities construction under Alternative 5 would be similar to those described for Alternative 1A but with only one intake as opposed to five. Operations would be different under Alternative 5 than under Alternative 1A.

**Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

The regional economic effects on employment and income in the Delta region were evaluated during construction. Changes are shown relative to the Existing Conditions and the No Action Alternative (regional economic conditions do not differ between Existing Conditions and No Action Alternative). The effects on employment and income are displayed in Table 16-47. The direct and total change is shown that would result from conveyance-related spending. As evident in Table 16-47, spending on conveyance construction results in substantial local economic activity in the region. As shown, direct construction employment is anticipated to vary over the 8-year construction period, with an estimated 886 FTE jobs in the first year and 52 FTE jobs in the final year of the construction period. Construction employment is estimated to peak at 1,372 FTE jobs in year 4. Total employment (direct, indirect, and induced) would peak in year 3, at 4,780 FTE jobs.

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Employment (FTE)</th>
<th>Total Labor Income (million $)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Direct</td>
<td>Total</td>
</tr>
<tr>
<td>1</td>
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<tr>
<td>8</td>
<td>52</td>
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<tr>
<td>Total</td>
<td>7,123</td>
<td>533.9</td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).

- **IMPLAN results are changes relative to Existing Condition or No Action Alternative.**
- **Includes direct, indirect, and induced effects; numbers may not sum to the total due to rounding.**
- **Detailed estimates are presented in Appendix 16A, Regional Economic Impacts of Water Conveyance Facility Construction.**
The footprint of conveyance and related facilities such as roads and utilities would remove some existing agricultural land from production, so the effects on employment and income would be negative. The regional economic effects on employment and income in the Delta region from the change in agricultural production are reported in Table 16-48. As shown, direct agricultural employment would be reduced by an estimated 22 FTE jobs, while total employment (direct, indirect, and induced) associated with agricultural employment would fall by 83 FTE jobs. Mapbook Figures M14-1 and M14-2 display areas of Important Farmland and lands under Williamson Act contracts that could be converted to other uses due to the construction of water conveyance facilities for the Pipeline/Tunnel alignment. Note that not all of these structures would be constructed under this alternative.

Table 16-48. Regional Economic Effects on Agricultural Employment and Labor Income during Construction (Alternative 5)

<table>
<thead>
<tr>
<th>Regional Economic Impact</th>
<th>Impacts on Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment (FTE)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-22</td>
</tr>
<tr>
<td>Total</td>
<td>-83</td>
</tr>
<tr>
<td>Labor Income (million $)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-2.8</td>
</tr>
<tr>
<td>Total</td>
<td>-5.3</td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).

a IMPPLAN results are changes relative to Existing Condition or No Action Alternative.
b Includes direct, indirect, and induced effects.

Additionally, the Alternative 5 construction footprint would result in the abandonment of an estimated six producing natural gas wells in the study area, as described in Chapter 26, Mineral Resources, Section 26.3.3.10, Impact MIN-1. This could result in the loss of employment and labor income associated with monitoring and maintaining these wells. Generally, small crews perform ongoing monitoring and maintenance of several wells at a time. As shown in Chapter 26, Mineral Resources, Table 26-3, 516 active producer wells are located in the study area. Even if all six producing wells in the Alternative 5 construction footprint were abandoned and not replaced with new wells installed outside the construction footprint, the percentage reduction in the number of natural gas wells would be very small. As a result, the employment and labor income effects associated with well abandonment, while negative, would be minimal.

NEPA Effects: Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Construction of the proposed water conveyance facilities would increase total employment and income in the Delta region. The change would result from expenditures on construction, increasing employment, and from changes in agricultural production, decreasing employment. Changes in recreational expenditures and natural gas well operations could also affect regional employment and income, but these have not been quantified. The total change in
employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. The BDCP costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.10, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.3.10, REC-1 through REC-4.; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.10, Impact MIN-1 When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities

Population

Construction of conveyance facilities would require an estimated peak of 1,370 workers in year 4 of the assumed 8-year construction period. It is anticipated that many of these new jobs would be filled from within the existing five-county labor force. However, construction of the tunnels may require specialized worker skills not readily available in the local labor pool. As a result, it is anticipated that some specialized workers may be recruited from outside the five-county region.

Considering the multi-year duration of conveyance facility construction, it is anticipated that non-local workers would temporarily relocate to the five-county region, thus adding to the local population. As discussed in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.1, Direct Growth Inducement, an estimated 400 workers could come from out of the Delta region, suggesting that approximately 400 workers could relocate to the Delta region at the peak of the construction period. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Changes in demand for public services resulting from any increase in population are addressed in Chapter 20, Public Services and Utilities, Section 20.3.3.10, Impact UT-1 through UT-6.

Housing

Changes in housing demand are based on changes in supply resulting from displacement during facilities construction and changes in housing demand resulting from employment associated with construction of conveyance facilities. As described in Chapter 13, Land Use, Section 13.3.3.10, Impact LU-2, construction of water conveyance facilities under Alternative 5 would conflict with approximately 29 residential structures.

The construction workforce would most likely commute daily to the work sites from within the five-county region; however, if needed, there are about 53,000 housing units available to accommodate workers who may choose to commute on a workweek basis or who may choose to temporarily relocate to the region for the duration of the construction period, including the estimated 400 workers who may temporarily relocate to the Delta region from out of the region. In addition to the
available housing units, there are recreational vehicle parks and hotels and motels within the five-
county region to accommodate any construction workers. As a result, and as discussed in more
detail in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.1, Direct Growth
Inducement, construction of the proposed conveyance facilities is not expected to substantially
increase the demand for housing within the five-county region.

**NEPA Effects:** Within specific local communities, there could be localized effects on housing.
However, given the availability of housing within the five-county region, predicting where this
impact might fall would be highly speculative. In addition, new residents would likely be dispersed
across the region, thereby not creating a burden on any one community.

Because these activities would not result in permanent concentrated, substantial increases in
population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would result in minor
population increases in the Delta region with adequate housing supply to accommodate the change
in population. Therefore, the minor increase in population is not anticipated to lead to adverse
physical changes in the environment.

**Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed
Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 5, effects on community character would be similar in nature to
those described under Alternative 1A, Impact ECON-3. However, the intensity of these effects would
be reduced due to the construction of one intake facility and a single bore tunnel. As such, regional
population and employment would increase to levels described above under Impact ECON-1 and
ECON-2. While water conveyance construction could result in beneficial effects relating to the
economic welfare of a community, adverse social effects could also arise as a result of declining
economic stability or changes in community cohesion in communities closest to construction effects
and in those most heavily influenced by agricultural and recreational activities. Implementation of
mitigation measures and environmental commitments related to noise, visual effects,
transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B,
Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-3.

**CEQA Conclusion:** Construction of water conveyance facilities under Alternative 5 could affect
community character in the Delta region. However, because these impacts are social in nature,
rather than physical, they are not considered impacts under CEQA. To the extent that changes to
community character would lead to physical impacts involving population growth, such impacts are
described under Impact ECON-2 and in Chapter 30, Growth Inducement and Other Indirect Effects,
Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to
specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community
character stemming from a lack of maintenance, upkeep, and general investment. However,
implementation of mitigation measures and environmental commitments related to noise, visual
effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see
Appendix 3B, Environmental Commitments). Specifically, these commitments include Develop and
Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials
Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise
Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito
Management Plans.
Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities

**NEPA Effects:** Effects on tax revenue as a result of water conveyance construction under Alternative 5 would be similar to those described under Alternative 1A, Impact ECON-4. However, due to the construction of fewer intake facilities, forgone revenue is estimated at $7.4 million over the construction period. This figure may be smaller if land acquisition needs are smaller due to the construction of a single bore tunnel between the Intermediate Forebay and Byron Tract Forebay. These decreases in revenue could potentially result in the loss of a substantial share of some agencies' tax bases, particularly for smaller districts affected by the BDCP. This economic effect would be considered adverse; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for constructing, locating, operating, or mitigating for new Delta water conveyance facilities. Additionally, as discussed under Impact ECON-2, construction of the water conveyance facilities would be anticipated to result in a net increase of income and employment in the Delta region. This would also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Under Alternative 5, construction of water conveyance facilities would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the construction period, property tax and assessment revenue forgone is estimated at $7.4 million. However, the Sacramento-San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed Water Conveyance Facilities

**NEPA Effects:** Under Alternative 5, disruption of recreational activities during the construction period would be similar in character, but smaller in extent and duration, than that described under Alternative 1A, Impact ECON-5. This is largely because fewer intake facilities would be constructed under this alternative. Additionally, the tunnel between the Intermediate Forebay and Byron Tract Forebay would be constructed with a single bore. While access to recreational facilities would be maintained throughout construction, the quality of recreational activities including boating, fishing, waterfowl hunting, and hiking in the Delta could be indirectly affected by noise, lighting, traffic, and visual degradation in proximity to water conveyance construction. Relative to Alternative 1A, however, two fewer established recreational sites or areas would be affected by this alternative.

Construction of water conveyance structures under this alternative would be anticipated to result in a lower-quality recreational experience in a number of localized areas throughout the Delta, despite the implementation of mitigation measures, including enhancement of fishing access sites and incorporation of recreational access into project design, and environmental and non-environmental commitments, including providing funding to implement recreational improvements and control
aquatic weeds, providing notification of maintenance activities in waterways, and developing and implementing a noise abatement plan, as described in Appendix 3B, Environmental Commitments. With a decrease in recreational quality, the number of visits would be anticipated to decline, at least in areas closest to construction activities. The multi-year schedule and geographic scale of construction activities and the anticipated decline in recreational spending would be considered an adverse effect. The commitments and mitigation measure cited above would contribute to the reduction of this effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities under Alternative 5 could impact recreational revenue in the Delta region if construction activities result in fewer visits to the area. Fewer visits would be anticipated to result in decreased economic activity related to recreational activities. This section considers only the economic effects of recreational changes brought about by construction of the proposed water conveyance facilities. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.10, Impacts REC-1 through REC-4.

**Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Construction of conveyance facilities would convert land from existing agricultural uses to uses that include direct facility footprints, construction staging areas, borrow/spoils areas, RTM storage, temporary and permanent roads, and utilities. Agricultural land could also be affected by changes in water quality and other conditions that would affect crop productivity. These direct effects on agricultural land are described in Chapter 14, Agricultural Resources, Section 14.3.3.10, Impacts AG-1 and AG-2.

Changes in crop acreage were used to describe the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, Environmental Setting/Affected Environment. Table 16-49 summarizes the changes in acreage and value of agricultural production that would result in the Delta region as a result of Alternative 5 construction. Changes are shown relative to the Existing Conditions and the No Action Alternative by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The table also includes a summary of changes in crop acreages that are reported in greater detail in Appendix 14A, Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction.

Total value of irrigated crop production in the Delta would decline on average by $7.8 million per year during the construction period, with total irrigated crop acreage declining by about 5,000 acres. These estimates are not dependent on water year type.
Table 16-49. Crop Acres and Value of Agricultural Production in the Delta during Construction (Alternative 5)

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 5</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>478.7</td>
<td>-5.0</td>
</tr>
<tr>
<td>Grains</td>
<td>58.2</td>
<td>-0.4</td>
</tr>
<tr>
<td>Field crops</td>
<td>189.5</td>
<td>-1.6</td>
</tr>
<tr>
<td>Forage crops</td>
<td>111.5</td>
<td>-1.2</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>76.7</td>
<td>-0.5</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>42.8</td>
<td>-1.2</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>642.2</td>
<td>-7.8</td>
</tr>
<tr>
<td>Grains</td>
<td>24.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>Field crops</td>
<td>112.8</td>
<td>-1.0</td>
</tr>
<tr>
<td>Forage crops</td>
<td>72.1</td>
<td>-1.0</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>266.7</td>
<td>-1.7</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>166.5</td>
<td>-4.0</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).

Alternative 5 may also affect production costs, investments in production facilities and standing orchards and vineyards, and salinity of agricultural water supply. Effects would be similar to those qualitatively described under Alternative 1A, Impact ECON-6. See Chapter 14, Agricultural Resources, Section 14.3.3.10, Impacts AG-1 and AG-2, for further discussion of indirect effects on agricultural resources.

NEPA Effects: Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.10, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.
Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

Permanent effects on regional economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-7. Increased expenditures related to operation and maintenance of water conveyance facilities would be expected to result in a permanent increase in regional employment and income, as presented in Table 16-22. The permanent removal of agricultural land following construction would have lasting negative effects on agricultural employment and income, as shown in Table 16-23.

**NEPA Effects:** Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would increase total employment and income in the Delta region. The net change would result from expenditures on operation and maintenance and from changes in agricultural production. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.10, Impacts AG-3 and AG-4; changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.3.10, Impacts REC-5 through REC-8. When required, DWR would provide compensation to landowners as a result of acquiring lands for the proposed conveyance facilities. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

Permanent effects on population and housing during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-8. It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. It is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.
**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population and therefore adverse changes in the physical environment are not anticipated.

**Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 5, effects on community character would be similar in nature, location, and magnitude to those described under Alternative 1A, Impact ECON-9. Variations in the intensity of these effects would result from the operation and maintenance of one intake facility and a single-bore tunnel between the Intermediate Forebay and Byron Tract Forebay. While water conveyance operation and maintenance could result in beneficial effects relating to the economic welfare of a community, lasting adverse social effects, including effects on community cohesion, could also arise in communities closest to physical features and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, *Environmental Commitments*). These actions are summarized under Alternative 1A, Impact ECON-9.

**CEQA Conclusion:** Operation and maintenance of water conveyance facilities under Alternative 5 could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-8 and in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

**Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Effects on tax revenue as a result of ongoing water conveyance operations under Alternative 5 would be similar to those described under Alternative 1A, Impact ECON-10. However, with the construction of fewer intake facilities, forgone revenue is estimated to $44.4 million over the 50-year permit period. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the BDCP. This economic effect would be adverse; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for constructing, locating, operating, or mitigating for new Delta water conveyance facilities. Additionally, as discussed under Impact ECON-7, continued operation and maintenance of the water conveyance facilities would be anticipated to result in a net increase of income and employment in the Delta region. This could also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Under Alternative 5, the ongoing operation and maintenance of water conveyance facilities would restrict property tax revenue levels for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated at $44.4 million. However, the Sacramento-San Joaquin Delta Reform Act
Socioeconomics commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities

Effects on recreation economics during operation and maintenance of the proposed water conveyance facilities under Alternative 5 would be similar to those described under Alternative 1A, Impact ECON-11.

NEPA Effects: Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. Because effects of facility maintenance would be short-term and intermittent, substantial economic effects are not anticipated to result from operation and maintenance of the facilities.

CEQA Conclusion: Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 5 are anticipated to create minor effects on recreational resources and therefore, are not expected to substantially reduce economic activity related to recreational activities. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.10, Impacts REC-5 through REC-8.

Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

During operation and maintenance of conveyance facilities existing agricultural land would be in uses that include direct facility footprints and associated permanent roads and utilities. Agricultural land could also be affected by changes in water quality and other conditions that would affect crop productivity. These direct effects on agricultural land are described in Chapter 14, Agricultural Resources, Section 14.3.3.10, Impacts AG-1 and AG-2.

Changes in crop acreage were used to estimate the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, Environmental Setting/Affected Environment. Table 16-50 summarizes the changes in acreage and value of agricultural production that would result in the Delta region during operation of Alternative 5. Changes are shown relative to the Existing Conditions and the No Action Alternative by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The changes in crop acreages are reported in greater detail in Appendix 14A, Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction.

Total value of irrigated crop production in the Delta region would decline on average by $7.0 million per year during operation and maintenance, with total irrigated crop acreage declining by about 4,300 acres. These estimates are not dependent on water year type.
Table 16-50. Crop Acres and Value of Agricultural Production in the Delta Region during Operations and Maintenance (Alternative 5)

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 5</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>479.4</td>
<td>-4.3</td>
</tr>
<tr>
<td>Grains</td>
<td>58.3</td>
<td>-0.3</td>
</tr>
<tr>
<td>Field crops</td>
<td>189.8</td>
<td>-1.3</td>
</tr>
<tr>
<td>Forage crops</td>
<td>111.6</td>
<td>-1.1</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>76.7</td>
<td>-0.4</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>42.9</td>
<td>-1.1</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>643.1</td>
<td>-7.0</td>
</tr>
<tr>
<td>Grains</td>
<td>24.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>Field crops</td>
<td>113.1</td>
<td>-0.8</td>
</tr>
<tr>
<td>Forage crops</td>
<td>72.2</td>
<td>-0.9</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>266.9</td>
<td>-1.5</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>166.8</td>
<td>-3.7</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).

Alternative 5 may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be associated with operational constraints and longer travel times due to permanent facilities. In most cases, affected lands fall within the facilities footprint, and are included in the agricultural acreage and value of production described elsewhere in this Chapter and in Chapter 14, Agricultural Resources, Section 14.3.3.10.

Crop yields and crop selection on lands in the Delta could be affected by changes in salinity of agricultural water supply during operation and maintenance activities. If operation of the proposed conveyance facilities increases salinity in part of the Delta, crops that are more sensitive to salinity could shift to other lands in the five-county Delta region. See Chapter 14, Agricultural Resources, Section 14.3.3.10, Impact AG-2, for further discussion of effects from changes in salinity.

NEPA Effects: The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: During operation and maintenance of the proposed water conveyance facilities the value of agricultural production in the Delta region would be reduced. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.10, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical effect. Measures to reduce these impacts are...
Socioeconomics discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


NEPA Effects: Effects on regional economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-13. However, under this alternative, 25,000 acres would be restored under CM4, rather than 65,000 acres. In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, implementation of these components are anticipated to result in the abandonment of natural gas wells, causing a decrease in employment and labor income associated with monitoring and maintaining wells, which would be considered an adverse effect. These effects, however, would be smaller than those estimated for Alternative 1A because, under Alternative 5, 40,000 fewer acres would be restored, displacing fewer wells. Mitigation Measure MIN-5, described in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5, would be available to reduce these effects by minimizing, to the extent feasible, the need for well abandonment or relocation.

CEQA Conclusion: Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production activities. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impacts AG-3 and AG-4; changes in recreation-related activities are addressed in Chapter 15, Recreation, Section 15.3.3.2, Impacts REC-9 through REC-11; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5.

Impact ECON-14: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on population and housing as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-14. However, under this alternative, 25,000 acres would be restored under CM4, rather than 65,000 acres. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired.
**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes to the physical environment are not anticipated to result.

**Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22**

**NEPA Effects:** Effects on community character as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-15. However, under this alternative, 25,000 acres would be restored under CM4, rather than 65,000 acres. While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects, including effects on community cohesion, could also arise in those communities closest to character-changing effects and those most heavily influenced by agricultural activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, *Environmental Commitments*). These actions are summarized under Alternative 1A, Impact ECON-15.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 under Alternative 5 could affect community character within the Delta region. However, because these effects are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character are related to physical impacts involving population growth, these impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

**Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing the Proposed Conservation Measures 2–22**

**NEPA Effects:** Under Alternative 5, effects on local government fiscal conditions as a result of conservation measure implementation would be similar to those described under Alternative 1A, Impact ECON-16. However, under this alternative, 25,000 acres would be restored under CM4, rather than 65,000 acres. Forgone revenue would be estimated to reach approximately $109.7 million. Because Conservation Measures 2–22 would remove some private land from local property tax and assessment rolls, this economic effect would still be considered adverse; however, the BDCP proponents would offset forgone property tax and assessments levied by local governments and special districts on private lands converted to habitat.

**CEQA Conclusion:** Under Alternative 5, implementation of Conservation Measures 2–22 would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated to reach approximately $109.7 million. However, the BDCP proponents would compensate local governments and special districts for forgone revenue. CEQA does not require a
discussion of socioeconomic effects except where they would result in physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131).

Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Effects related to implementation of the Conservation Measures 2–22 under this alternative would be similar to those described under Alternative 1A, Impact ECON-17. However, the magnitude of effects related specifically to CM4, Tidal Habitat Restoration, would be smaller in magnitude, as this alternative would restore 25,000 acres instead of 65,000 acres. These measures may result in adverse and beneficial effects on recreational resources in the Delta region, resulting in the potential for decreased or increased economic activities related to recreation.

CEQA Conclusion: Implementation of conservation measures would limit opportunities for recreation and compromise the quality of activities, leading to potential economic impacts. However, over time, implementation could also improve the quality of existing recreational opportunities, creating increased economic value with respect to recreation. This section considers only the economic effects of recreational changes brought about by conservation measure implementation. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation Section 15.3.3.10, Impacts REC-9 through REC-11.

Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Effects on agricultural economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-18, except the magnitude would be reduced since 25,000 acres of tidal habitat would be restored under CM4 instead of 65,000 acres. Conservation Measures 2–22 would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14, Agricultural Resources, Section 14.3.3.10, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents would provide compensation to property owners for losses due to implementation of the alternative.

CEQA Conclusion: Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.10, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not
constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1.

**Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions**

The socioeconomic effects associated with operation of Alternative 5 would be similar to those described under Alternative 1A, Impact ECON-19; however, the magnitude of the effects would be different based on the construction of one intake and different operational guidelines leading to different deliveries to hydrologic regions. Changes in deliveries to hydrologic regions could result in beneficial or adverse socioeconomic effects in these areas. In hydrologic regions where water deliveries are predicted to increase when compared with the No Action Alternative, more stable agricultural activities could support employment and economic production associated with agriculture.

**Changes in SWP Deliveries Compared to No Action Alternative**

Compared to No Action Alternative (2060), Alternative 5 would increase deliveries to all hydrologic regions. Compared to the No Action Alternative (2060), South Coast would receive the largest net increase (up to 104 TAF of Table A plus Article 21 deliveries) among the regions, which represents 65% of the net increase in Table A plus Article 21 M&I deliveries under Alternative 5 (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-16, for more information).

**Changes in CVP Deliveries Compared to No Action Alternative**

Alternative 5 would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to the No Action Alternative (2060), Alternative 5 would result in increased deliveries to the other hydrologic regions. Compared to the No Action Alternative (2060), San Francisco Bay is projected to receive the largest potential increase (2 TAF) among the hydrologic regions (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-17 for more information).

**NEPA Effects:** Where M&I deliveries increase, population growth could lead to general economic growth and support water-intensive industries. Changes to agricultural production and population growth with its associated economic activity could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, growth associated with deliveries could require additional expenditures for local governments while also supporting increases in revenue.

**CEQA Conclusion:** As described above, the operational components of BDCP Conservation Measure 1 could result in a number of effects in areas receiving SWP and CVP water deliveries outside of the Delta.

**Changes in SWP Deliveries Compared to Existing Conditions**

Compared to Existing Conditions, Alternative 5 would increase deliveries to all hydrologic regions except for Tulare Lake and South Lahontan Regions, which would experience a decrease in deliveries, and the San Joaquin River Region, which would experience no change in deliveries. South Coast would receive the largest net increase (up to 45 TAF of Table A deliveries) among the regions, which represents 76% of the net increase in Table A M&I deliveries under Alternative 5. Table A plus Article 21 M&I deliveries to Tulare Lake and South Lahontan Regions would decrease by up to 2
TAF (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-16 for more information).

**Changes in CVP Deliveries Compared to Existing Conditions**

Alternative 5 would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan, and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to Existing Conditions, Alternative 5 would result in decreased deliveries to the other hydrologic regions. Compared to Existing Conditions, San Francisco Bay is projected to receive the largest decrease (5 TAF) among the hydrologic regions (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-17 for more information).

**Summary**

Operation of water conveyance facilities under Alternative 5 could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.

**16.3.3.11 Alternative 6A—Isolated Conveyance with Pipeline/Tunnel and Intakes 1–5 (15,000 cfs; Operational Scenario D)**

Facilities construction under Alternative 6A would be similar to those described for Alternative 1A. However, this would be an isolated conveyance, no longer involving operation of the existing SWP/CVP south Delta diversion facilities for Clifton Court Forebay and the Jones Pumping Plant. Operations would be different under Alternative 6A than under Alternative 1A.

**Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Temporary effects on regional economics during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-1. As shown in Table 16-19, over the construction period, regional effects of construction activities would result in direct employment of more than 21,000 FTE, with total employment effects in excess of 65,000 FTE. Increases in labor income associated with this employment would also be expected. Declines in agricultural production would be expected to lead to a decrease in employment of 27 FTE, with total effects leading to a decline of 100 FTE. Similarly, labor income related to these positions would decline, as shown in Table 16-20.

**NEPA Effects:** Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would increase total employment and income in the Delta region, temporarily. The increase in employment and income
that would result from expenditures on construction would be greater than the reduction in employment and income attributable to losses in agricultural production. Changes in recreational expenditures and natural gas well operations could also affect regional employment and income, but these have not been quantified. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.11, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.3.11, REC-1 through REC-4; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.11, Impact MIN-1. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Effects on population and housing during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-2. It is anticipated that non-local workers would temporarily relocate to the Delta region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Within specific local communities, there could be localized effects on housing. However, given the availability of housing within the five-county region, predicting where this impact might fall would be speculative. In addition, new residents would likely be dispersed across the region, thereby not creating a substantial burden on any one community.

**NEPA Effects:** Because these activities would not result in permanent concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would result in minor temporary population increases in the Delta region, which has an adequate housing supply to accommodate the change in population. Therefore, adverse physical changes resulting from the minor increase in population are not anticipated.

**Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 6A, effects on community character would be similar to those described under Alternative 1A, Impact ECON-3. While water conveyance construction could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise as a result of declining economic stability or changes in community cohesion in communities closest to construction effects and in those most heavily influenced by agricultural and...
recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-3.

**CEQA Conclusion:** Construction of water conveyance facilities under Alternative 6A could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-2 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment. However, implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito Management Plans.

**Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Effects on tax revenue as a result of water conveyance construction under Alternative 6A would be identical to those described under Alternative 1A, Impact ECON-4. While this economic effect would be considered adverse, BDCP proponents would compensate local governments for the loss of property tax or assessment revenue associated with construction of water conveyance facilities. Additionally, local entities could benefit from an increase in sales tax revenue.

**CEQA Conclusion:** Construction of water conveyance facilities for Alternative 6A would result in the removal of a portion of the property tax base for various local government entities in the Delta region. However, entities receiving water from the State Water Project and federal Central Valley Project would mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 6A, disruption of recreational activities during the construction period would be similar that described under Alternative 1A, Impact ECON-5. The quality of recreational activities including boating, fishing, waterfowl hunting, and hiking in the Delta could be
indirectly affected by noise, lighting, traffic, and visual degradation in proximity to water conveyance construction.

While access to recreational facilities would be maintained, construction of water conveyance structures under this alternative would be anticipated to result in a lower-quality recreational experience in a number of localized areas throughout the Delta, despite the implementation of mitigation measures, including enhancement of fishing access sites and incorporation of recreational access into project design, and environmental and non-environmental commitments, including providing funding to implement recreational improvements and control aquatic weeds, providing notification of maintenance activities in waterways, and developing and implementing a noise abatement plan, as described in Appendix 3B, Environmental Commitments. With a decrease in recreational quality, the number of visits would be anticipated to decline, at least in areas closest to construction activities. The multi-year schedule and geographic scale of construction activities and the anticipated decline in recreational spending would be considered an adverse effect. The commitments and mitigation measure cited above would contribute to the reduction of this effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities under Alternative 6A could impact recreational revenue in the Delta region if construction activities result in fewer visits to the area. Fewer visits would be anticipated to result in decreased economic activity related to recreational activities. This section considers only the economic effects of recreational changes brought about by construction of the proposed water conveyance facilities. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.11, Impacts REC-1 through REC-4.

**Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Effects on agricultural economics during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-6. Total value of irrigated crop production in the Delta would decline on average by $8.9 million per year during the 8 year construction period, with total irrigated crop acreage declining by about 5,600 acres. Alternative 6A may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints and longer travel times due to facilities construction. Additionally, loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction.

**NEPA Effects:** Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.11, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the
severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on regional economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-7. Increased expenditures related to operation and maintenance of water conveyance facilities would be expected to result in a permanent increase in regional employment and income, as presented in Table 16-22. The permanent removal of agricultural land following construction would have lasting negative effects on agricultural employment and income, as shown in Table 16-23.

**NEPA Effects:** Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would increase total employment and income in the Delta region. The net change would result from expenditures on operation and maintenance and from changes in agricultural production. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.11, Impacts AG-3 and AG-4; changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.3.11, Impacts REC-5 through REC-8. When required, DWR would provide compensation to landowners as a result of acquiring lands for the proposed conveyance facilities. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on population and housing during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-8. It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the
total 2020 projected regional population of 4.6 million and be distributed throughout the region. It is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing.

NEPA Effects: Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

CEQA Conclusion: Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population and therefore adverse changes in the physical environment are not anticipated.

Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 6A, effects on community character would be similar in nature, location, and magnitude to those described under Alternative 1A, Impact ECON-9. While water conveyance operation and maintenance could result in beneficial effects relating to the economic welfare of a community, lasting adverse social effects, including effects on community cohesion, could also arise in communities closest to physical features and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce the intensity of adverse effects on the character of Delta communities (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-9.

CEQA Conclusion: Operation and maintenance of water conveyance facilities under Alternative 6A could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-8 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Effects on tax revenue as a result of ongoing water conveyance operation and maintenance under Alternative 6A would be similar to those described under Alternative 1A, Impact ECON-10. While this economic effect would be considered adverse, BDCP proponents would compensate local governments for the loss of property tax or assessment revenue associated with construction of water conveyance facilities. Additionally, local entities could benefit from an increase in sales tax revenue.

CEQA Conclusion: Continued operation and maintenance of water conveyance facilities for Alternative 6A would result in the removal of a portion of the property tax base for various local government entities in the Delta region. However, entities receiving water from the State Water Project and federal Central Valley Project would mitigate for lost property tax and assessment revenue associated with construction of conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales
tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities

Effects on recreation economics during operation and maintenance of the proposed water conveyance facilities under Alternative 6A would be similar to those described under Alternative 1A, Impact ECON-11.

NEPA Effects: Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. Because effects of facility maintenance would be short-term and intermittent, substantial economic effects are not anticipated to result from operation and maintenance of the facilities.

CEQA Conclusion: Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 6A are anticipated to create minor effects on recreational resources and therefore, are not expected to substantially reduce economic activity related to recreational activities. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.11, Impacts REC-5 through REC-8.

Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

Permanent effects on agricultural economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-12. Total value of irrigated crop production in the Delta would decline on average by $7.4 million per year during operation and maintenance, with total irrigated crop acreage declining by about 4,400 acres. Alternative 6A may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints, changes in water quality, and longer travel times due to the permanent footprint of facilities. Additionally, loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction.

NEPA Effects: The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: During operation and maintenance of the proposed water conveyance facilities, the value of agricultural production in the Delta region would be reduced. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.11, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters...
throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


**NEPA Effects:** Effects on regional economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-13. In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, implementation of these components are anticipated to result in the abandonment of natural gas wells, causing a decrease in employment and labor income associated with monitoring and maintaining wells, which would be considered an adverse effect. Mitigation Measure MIN-5, described in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5, would be available to reduce these effects by minimizing, to the extent feasible, the need for well abandonment or relocation.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production activities. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impacts AG-3 and AG-4; changes in recreation-related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.2, Impacts REC-9 through REC-11; abandonment of natural gas wells is addressed in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5.

**Impact ECON-14: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22**

Effects on population and housing as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-14. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired.
**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes to the physical environment are not anticipated to result.

**Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22**

**NEPA Effects:** Effects on community character as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-15 because the measures are similar. While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects, including effects on community cohesion, could also occur to those communities closest to character-changing effects and those most heavily influenced by agricultural activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-15.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 under Alternative 6A could affect community character within the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character are related to physical impacts involving population growth, these impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

**Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing the Proposed Conservation Measures 2–22**

**NEPA Effects:** Under Alternative 6A, effects on local government fiscal conditions as a result of conservation measure implementation would be similar to those described under Alternative 1A, Impact ECON-16. Conservation Measures 2–22 would remove some private land from local property tax and assessment rolls. This economic effect would be considered adverse; the BDCP proponents would offset forgone property tax and assessments levied by local governments and special districts on private lands converted to habitat.

**CEQA Conclusion:** Under Alternative 6A, implementation of Conservation Measures 2–22 would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated to reach $176.7 million. However, the BDCP proponents would compensate local governments and special districts for forgone revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131).
Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Effects related to implementation of the Conservation Measures 2–22 under this alternative would be similar to those described under Alternative 1A, Impact ECON-17. These measures may result in adverse and beneficial effects on recreational resources in the Delta region, resulting in the potential for decreased or increased economic activities related to recreation.

CEQA Conclusion: Implementation of conservation measures would limit opportunities for recreation and compromise the quality of activities, leading to potential economic impacts. However, over time, implementation could also improve the quality of existing recreational opportunities, creating increased economic value with respect to recreation. This section considers only the economic effects of recreational changes brought about by conservation measure implementation. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.11, Impacts REC-9 through REC-11.

Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on agricultural economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-18. Conservation Measures 2–22 would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14, Agricultural Resources, Section 14.3.3.11, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents would provide compensation to property owners for losses due to implementation of the alternative.

NEPA Effects: Because implementation of Conservation Measures 2–22 would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.11, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1.
Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions

Decreased water deliveries may affect socioeconomics in hydrologic regions through similar mechanisms as described for other alternatives above; however, the effects would generally be reversed. For example, it is reasonable to expect that reduced or less reliable water deliveries would result in decreased agricultural production and, in turn, a reduction in both direct and indirect agricultural employment. Economic and social patterns tied to predominant agricultural industrial activities and land uses could erode, changing the character of agricultural communities in hydrologic regions.

Changes in SWP Deliveries Compared to No Action Alternative

Compared to No Action Alternative (2060), Alternative 6A would decrease deliveries to all hydrologic regions except for the San Joaquin River Region, which would experience no change in deliveries. Compared to the No Action Alternative (2060), South Coast would receive the largest net decrease (up to 287 TAF of Table A plus Article 21 deliveries) among the regions, which represents 75% of the decrease in Table A plus Article 21 M&I deliveries under Alternative 6A (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-16, for more information).

Changes in CVP Deliveries Compared to No Action Alternative

Alternative 6A would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to the No Action Alternative (2060), Alternative 6A would result in decreased deliveries to the other hydrologic regions. Compared to the No Action Alternative (2060) San Francisco Bay is projected to receive the largest potential decrease (approximately 8 TAF) among the hydrologic regions (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-17 for more information).

NEPA Effects: If operation of water conveyance facilities under Alternative 6A reduced M&I deliveries to the extent that it would, in the long run, constrain population growth, its implementation could reinforce a socioeconomic status quo or limit potential economic and employment growth in hydrologic regions. A detailed discussion of these potential effects is found in Appendix 5B, Responses to Reduced South of Delta Water Supplies. Such changes to agricultural production and population growth with its associated economic activity could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, limited growth associated with reduced deliveries could require lower expenditures for local governments while also leading to reduced revenue.

CEQA Conclusion: As described above, the operational components of BDCP Conservation Measure 1 could result in a number of effects in areas receiving SWP and CVP water deliveries outside of the Delta.

Changes in SWP Deliveries Compared to Existing Conditions

Compared to Existing Conditions, Alternative 6A would decrease deliveries to all hydrologic regions except for the San Joaquin River Region, which would experience no change in deliveries. South Coast would receive the largest net decrease (up to 356 TAF of Table A plus Article 21 deliveries) among the regions, which represents 72% of the decrease in Table A plus Article 21 M&I deliveries under Alternative 6A (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-16 for more information).
Changes in CVP Deliveries Compared to Existing Conditions

Alternative 6A would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan, and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to Existing Conditions, Alternative 6A would result in decreased deliveries to the other hydrologic regions. Compared to Existing Conditions, San Francisco Bay is projected to receive the largest decrease (up to 16 TAF) among the hydrologic regions (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-17 for more information).

Summary

Operation of water conveyance facilities under Alternative 6A could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.

16.3.3.12 Alternative 6B—Isolated Conveyance with East Alignment and Intakes 1–5 (15,000 cfs; Operational Scenario D)

Facilities construction under Alternative 6B would be similar to those described for Alternative 1B. However, Alternative 6B would be an isolated conveyance, no longer involving operation of the existing SWP and CVP south Delta diversion facilities for Clifton Court Forebay and Jones Pumping Plant. Operations would be different under Alternative 6B than under Alternative 1B.

Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities

Temporary effects on regional economics during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1B, Impact ECON-1. As shown in Table 16-25, over the construction period, regional effects of construction activities would result in direct employment of more than 29,000 FTE, with total employment effects in excess of 63,000 FTE. Increases in labor income associated with this employment would also be expected. Declines in agricultural production would be expected to lead to a decrease in employment of 90 FTE, with total effects leading to a decline of 340 FTE. Similarly, labor income related to these positions would decline, as shown in Table 16-26.

NEPA Effects: Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Construction of the proposed water conveyance facilities would increase total employment and income in the Delta region, temporarily. The increase in employment and income that would result from expenditures on construction would be greater than the reduction in employment and income attributable to losses in agricultural production. Changes in recreational expenditures and natural gas well operations could also affect regional employment and income, but
these have not been quantified. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.12, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.12, REC-1 through REC-4; abandonment of natural gas wells is addressed in Chapter 26, *Mineral Resources*, Section 26.3.3.12, Impact MIN-1. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Effects on population and housing during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1B, Impact ECON-2. It is anticipated that non-local workers would temporarily relocate to the Delta region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Within specific local communities, there could be localized effects on housing. However, given the availability of housing within the five-county region, predicting where this impact might fall would be speculative. In addition, new residents would likely be dispersed across the region, thereby not creating a substantial burden on any one community.

**NEPA Effects:** Because these activities would not result in permanent concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would result in minor temporary population increases in the Delta region, which has an adequate housing supply to accommodate the change in population. Therefore, adverse physical changes resulting from the minor increase in population are not anticipated.

**Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 6B, effects on community character would be similar to those described under Alternative 1B, Impact ECON-3. While water conveyance construction could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise as a result of declining economic stability or changes in community cohesion in communities closest to construction effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse
Socioeconomics

Alternative 1A, Impact ECON-3.

CEQA Conclusion: Construction of water conveyance facilities under Alternative 6B could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-2 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment. However, implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito Management Plans.

Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects on tax revenue as a result of water conveyance construction under Alternative 6B would be identical to those described under Alternative 1B, Impact ECON-4. While this economic effect would be considered adverse, BDCP proponents would compensate local governments for the loss of property tax or assessment revenue associated with construction of water conveyance facilities. Additionally, local entities could benefit from an increase in sales tax revenue.

CEQA Conclusion: Construction of water conveyance facilities for Alternative 6B would result in the removal of a portion of the property tax base for various local government entities in the Delta region. However, entities receiving water from the State Water Project and federal Central Valley Project would mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 6B, disruption of recreational activities during the construction period would be similar to that described under Alternative 1B, Impact ECON-5. Access to recreational facilities may be restricted throughout the construction period. Additionally, the quality of recreational activities including boating, fishing, waterfowl hunting, and hiking in the Delta could be indirectly affected by noise, lighting, traffic, and visual degradation in proximity to water conveyance construction.
Construction of water conveyance structures under this alternative would be anticipated to result in a lower-quality recreational experience in a number of localized areas throughout the Delta, despite the implementation of mitigation measures, including enhancement of fishing access sites and incorporation of recreational access into project design, and environmental and non-environmental commitments, including providing funding to implement recreational improvements and control aquatic weeds, providing notification of maintenance activities in waterways, and developing and implementing a noise abatement plan, as described in Appendix 3B, Environmental Commitments. With a decrease in recreational quality, the number of visits would be anticipated to decline, at least in areas closest to construction activities. The multi-year schedule and geographic scale of construction activities and the anticipated decline in recreational spending would be considered an adverse effect. The commitments and mitigation measure cited above would contribute to the reduction of this effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities under Alternative 6B could impact recreational revenue in the Delta region if construction activities result in fewer visits to the area. Fewer visits would be anticipated to result in decreased economic activity related to recreational activities. This section considers only the economic effects of recreational changes brought about by construction of the proposed water conveyance facilities. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, *Recreation*, Section 15.3.3.12, Impacts REC-1 through REC-4.

**Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Effects on agricultural economics during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1B, Impact ECON-6. Total value of irrigated crop production in the Delta would decline on average by $32.8 million per year during the construction period, with total irrigated crop acreage declining by about 19,460 acres. Alternative 6B may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints and longer travel times due to facilities construction. Additionally, loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction.

**NEPA Effects:** Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.12, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14,
Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

Permanent effects on regional economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1B, Impact ECON-7. Increased expenditures related to operation and maintenance of water conveyance facilities would be expected to result in a permanent increase in regional employment and income, as presented in Table 16-28. The permanent removal of agricultural land following construction would have lasting negative effects on agricultural employment and income, as shown in Table 16-29.

NEPA Effects: Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Operation and maintenance of the proposed water conveyance facilities would decrease total employment and income in the Delta region. The change would result from expenditures on operation and maintenance, increasing employment, and from changes in agricultural production, decreasing employment. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.12, Impacts AG-3 and AG-4; changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.3.12, Impacts REC-5 through REC-8. When required, DWR would provide compensation to landowners as a result of acquiring lands for the proposed conveyance facilities. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

Permanent effects on population and housing during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1B, Impact ECON-8. It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. It
is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population and therefore adverse changes in the physical environment are not anticipated.

**Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 6B, effects on community character would be similar in nature, location, and magnitude to those described under Alternative 1B, Impact ECON-9. While water conveyance operation and maintenance could result in beneficial effects relating to the economic welfare of a community, lasting adverse social effects, including effects on community cohesion, could also result in communities closest to physical features and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-9.

**CEQA Conclusion:** Operation and maintenance of water conveyance facilities under Alternative 6B could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-8 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

**Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Effects on tax revenue as a result of ongoing water conveyance operation and maintenance under Alternative 6B would be similar to those described under Alternative 1B, Impact ECON-10. While this economic effect would be considered adverse, BDCP proponents would compensate local governments for the loss of property tax or assessment revenue associated with construction of water conveyance facilities.

**CEQA Conclusion:** Continued operation and maintenance of water conveyance facilities for Alternative 6B would result in the removal of a portion of the property tax base for various local government entities in the Delta region. However, entities receiving water from the State Water Project and federal Central Valley Project would mitigate for lost property tax and assessment revenue associated with the siting of conveyance facilities (Water Code Section 85089). CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under
CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Effects on recreation economics during operation and maintenance of the proposed water conveyance facilities under Alternative 6B would be similar to those described under Alternative 1A, Impact ECON-11.

**NEPA Effects:** Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. Because effects of facility maintenance would be short-term and intermittent, substantial economic effects are not anticipated to result from operation and maintenance of the facilities.

**CEQA Conclusion:** Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 6B are anticipated to create minor effects on recreational resources and therefore, are not expected to substantially reduce economic activity related to recreational activities. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, *Recreation*, Section 15.3.3.12, Impacts REC-5 through REC-8.

**Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on agricultural economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1B, Impact ECON-12. Total value of irrigated crop production in the Delta would decline on average by $29.2 million per year during operation and maintenance, with total irrigated crop acreage declining by about 17,700 acres. Alternative 6B may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints, changes in water quality, and longer travel times due to the permanent footprint of facilities. Additionally, loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction.

**NEPA Effects:** The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** During operation and maintenance of the proposed water conveyance facilities, the value of agricultural production in the Delta region would be reduced. The permanent removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.12, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it
would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


**NEPA Effects:** Effects on regional economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-13 because the measures are similar. In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, implementation of these components are anticipated to result in the abandonment of natural gas wells, causing a decrease in employment and labor income associated with monitoring and maintaining wells, which would be considered an adverse effect. Mitigation Measure MIN-5, described in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5, would be available to reduce these effects by minimizing, to the extent feasible, the need for well abandonment or relocation.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production activities. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impacts AG-3 and AG-4; changes in recreation-related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.2, Impacts REC-9 through REC-11; abandonment of natural gas wells is addressed in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5.

**Impact ECON-14: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22**

Effects on population and housing as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-14 because the measures are similar. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.
**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes to the physical environment are not anticipated to result.

**Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22**

**NEPA Effects:** Effects on community character as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-15 because the measures are similar. While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects, including effects on community cohesion, could also occur to those communities closest to character-changing effects and those most heavily influenced by agricultural activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-15.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 under Alternative 6B could affect community character within the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character are related to physical impacts involving population growth, these impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

**Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing the Proposed Conservation Measures 2–22**

**NEPA Effects:** Under Alternative 6B, effects on local government fiscal conditions as a result of conservation measure implementation would be similar to those described under Alternative 1A, Impact ECON-16. Conservation Measures 2–22 would remove some private land from local property tax and assessment rolls. This economic effect would be considered adverse; however, the BDCP proponents would offset forgone property tax and assessments levied by local governments and special districts on private lands converted to habitat.

**CEQA Conclusion:** Under Alternative 6B, implementation of Conservation Measures 2–22 would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated to reach $176.7 million. However, the BDCP proponents would compensate local governments and special districts for forgone revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131).
Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Effects related to implementation of the Conservation Measures 2–22 under this alternative would be similar to those described under Alternative 1A, Impact ECON-17. These measures may result in adverse and beneficial effects on recreational resources in the Delta region, resulting in the potential for decreased or increased economic activities related to recreation.

CEQA Conclusion: Implementation of conservation measures would limit opportunities for recreation and compromise the quality of activities, leading to potential economic impacts. However, over time, implementation could also improve the quality of existing recreational opportunities, creating increased economic value with respect to recreation. This section considers only the economic effects of recreational changes brought about by conservation measure implementation. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.12, Impacts REC-9 through REC-11.

Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on agricultural economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-18 because the measures are similar. Conservation Measures 2–22 would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14, Agricultural Resources, Section 14.3.3.12, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents would provide compensation to property owners for losses due to implementation of the alternative.

NEPA Effects: Because implementation of the Conservation Measures 2–22 would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.12, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1.
**Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions**

**NEPA Effects:** The socioeconomic effects associated with operation of Alternative 6B would be the same as those described under Alternative 6A, Impact ECON-19, because deliveries would be based on the same operational guidelines. Changes in deliveries to hydrologic regions could result in adverse or beneficial socioeconomic effects in these areas. Reduced or less reliable water deliveries would result in decreased agricultural production and, in turn, a reduction in both direct and indirect agricultural employment. Economic and social patterns tied to predominant agricultural industrial activities and land uses could erode, changing the character of agricultural communities in hydrologic regions. If M&I deliveries were reduced to the extent that it would, in the long run, constrain population growth, implementation of Alternative 6B could reinforce a socioeconomic status quo or limit potential economic and employment growth in hydrologic regions. Changes to agricultural production and population growth with its associated economic activity could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, limited growth associated with reduced deliveries could require lower expenditures for local governments while also leading to reduced revenue.

**CEQA Conclusion:** Operation of water conveyance facilities under Alternative 6B could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.

**16.3.3.13 Alternative 6C—Isolated Conveyance with West Alignment and Intakes W1–W5 (15,000 cfs; Operational Scenario D)**

Facilities construction under Alternative 6C would be similar to those described for Alternative 1C. However, Alternative 6C would be an isolated conveyance, no longer involving operation of the existing SWP and CVP south Delta diversion facilities for Clifton Court Forebay and Jones Pumping Plant. Operations would be different under Alternative 6C than under Alternative 1C.

**Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Temporary effects on regional economics during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1C, Impact ECON-1. As shown in Table 16-31, over the construction period, regional effects of construction activities would result in direct employment of more than 26,000 FTE, with total employment effects of nearly 61,000 FTE. Increases in labor income associated with this employment would also be expected. Declines in agricultural production would be expected to lead to a decrease in employment of 64 FTE, with total effects leading to a decline of 240 FTE. Similarly, labor income related to these positions would decline, as shown in Table 16-32.

**NEPA Effects:** Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure
AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would increase total employment and income in the Delta region, temporarily. The increase in employment and income that would result from expenditures on construction would be greater than the reduction in employment and income attributable to losses in agricultural production. Changes in recreational expenditures and natural gas well operations could also affect regional employment and income, but these have not been quantified. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.13, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.3.13, REC-1 through REC-4; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.13, Impact MIN-1. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Effects on population and housing during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1C, Impact ECON-2. It is anticipated that non-local workers would temporarily relocate to the Delta region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Within specific local communities, there could be localized effects on housing. However, given the availability of housing within the five-county region, predicting where this impact might fall would be speculative. In addition, new residents would likely be dispersed across the region, thereby not creating a substantial burden on any one community.

**NEPA Effects:** Because these activities would not result in permanent concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would result in minor temporary population increases in the Delta region, which has an adequate housing supply to accommodate the change in population. Therefore, adverse physical changes resulting from the minor increase in population are not anticipated.
Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 6C, effects on community character would be similar to those described under Alternative 1C, Impact ECON-3. While water conveyance construction could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise as a result of declining economic stability or changes in community cohesion in communities closest to construction effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-3.

CEQA Conclusion: Construction of water conveyance facilities under Alternative 6C could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-2 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment. However, implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito Management Plans.

Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Effects on tax revenue as a result of water conveyance construction under Alternative 6C would be identical to those described under Alternative 1C, Impact ECON-4. While this economic effect would be considered adverse, BDCP proponents would compensate local governments for the loss of property tax or assessment revenue associated with construction of water conveyance facilities. Additionally, local entities could benefit from an increase in sales tax revenue.

CEQA Conclusion: Construction of water conveyance facilities for Alternative 6C would result in the removal of a portion of the property tax base for various local government entities in the Delta region. However, entities receiving water from the State Water Project and federal Central Valley Project would mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.
Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 6C, disruption of recreational activities during the construction period would be identical to that described under Alternative 1C, Impact ECON-5. Access to recreational facilities may be restricted throughout the construction period. Additionally, the quality of recreational activities including boating, fishing, waterfowl hunting, and hiking in the Delta could be indirectly affected by noise, lighting, traffic, and visual degradation in proximity to water conveyance construction.

Construction of water conveyance structures under this alternative would be anticipated to result in a lower-quality recreational experience in a number of localized areas throughout the Delta, despite the implementation of mitigation measures, including enhancement of fishing access sites and incorporation of recreational access into project design, and environmental and non-environmental commitments, including providing funding to implement recreational improvements and control aquatic weeds, providing notification of maintenance activities in waterways, and developing and implementing a noise abatement plan, as described in Appendix 3B, Environmental Commitments.

With a decrease in recreational quality, the number of visits would be anticipated to decline, at least in areas closest to construction activities. The multi-year schedule and geographic scale of construction activities and the anticipated decline in recreational spending would be considered an adverse effect. The commitments and mitigation measure cited above would contribute to the reduction of this effect.

CEQA Conclusion: Construction of the proposed water conveyance facilities under Alternative 6C could impact recreational revenue in the Delta region if construction activities result in fewer visits to the area. Fewer visits would be anticipated to result in decreased economic activity related to recreational activities. This section considers only the economic effects of recreational changes brought about by construction of the proposed water conveyance facilities. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.13, Impacts REC-1 through REC-4.

Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of the Proposed Water Conveyance Facilities

Effects on agricultural economics during construction of the proposed water conveyance facilities would be similar to those described under Alternative 1C, Impact ECON-6. Total value of irrigated crop production in the Delta would decline on average by $22.2 million per year during the construction period, with total irrigated crop acreage declining by about 14,300 acres. Alternative 6C may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints and longer travel times due to facilities construction. Additionally, loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction.

NEPA Effects: Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.
**CEQA Conclusion:** Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.13, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on regional economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1C, Impact ECON-7. Increased expenditures related to operation and maintenance of water conveyance facilities would be expected to result in a permanent increase in regional employment and income, as presented in Table 16-34. The permanent removal of agricultural land following construction would have lasting negative effects on agricultural employment and income, as shown in Table 16-35.

**NEPA Effects:** Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would increase total employment and income in the Delta region. The net change would result from expenditures on operation and maintenance and from changes in agricultural production. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.13, Impacts AG-3 and AG-4; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.13, Impacts REC-5 through REC-8. When required, DWR would provide compensation to landowners as a result of acquiring lands for the proposed conveyance facilities. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.
Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

Permanent effects on population and housing during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1C, Impact ECON-8. It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. It is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing.

NEPA Effects: Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

CEQA Conclusion: Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population and therefore adverse changes in the physical environment are not anticipated.

Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 6C, effects on community character would be similar in nature, location, and magnitude to those described under Alternative 1C, Impact ECON-9. While water conveyance operation and maintenance could result in beneficial effects relating to the economic welfare of a community, lasting adverse social effects, including effects on community cohesion, could also arise in communities closest to physical features and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce the intensity of adverse effects on the character of Delta communities (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-9.

CEQA Conclusion: Operation and maintenance of water conveyance facilities under Alternative 6C could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-8 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Effects on tax revenue as a result of ongoing water conveyance operation and maintenance under Alternative 6C would be similar to those described under Alternative 1C, Impact ECON-10. While this economic effect would be considered adverse, BDCP proponents would compensate local governments for the loss of property tax or assessment revenue associated with construction of water conveyance facilities. Additionally, local entities may benefit from an increase in sales tax revenue.
**CEQA Conclusion:** Continued operation and maintenance of water conveyance facilities for Alternative 6C would result in the removal of a portion of the property tax base for various local government entities in the Delta region. However, entities receiving water from the State Water Project and federal Central Valley Project would mitigate for lost property tax and assessment revenue associated with land needed for the siting of conveyance facilities (Water Code Section 85089). Additionally, any losses may be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Effects on recreation economics during operation and maintenance of the proposed water conveyance facilities under Alternative 6C would be similar to those described under Alternative 1A, Impact ECON-11.

**NEPA Effects:** Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. Because effects of facility maintenance would be short-term and intermittent, substantial economic effects are not anticipated to result from operation and maintenance of the facilities.

**CEQA Conclusion:** Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 6C are anticipated to create minor effects on recreational resources and therefore, are not expected to substantially reduce economic activity related to recreational activities. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, *Recreation*, Section 15.3.3.13, Impacts REC-5 through REC-8.

**Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on agricultural economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1C, Impact ECON-12. Total value of irrigated crop production in the Delta would decline on average by $17.7 million per year during operation and maintenance, with total irrigated crop acreage declining by about 11,700 acres. Alternative 6C may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints, changes in water quality, and longer travel times due to the permanent footprint of facilities. Additionally, loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction.

**NEPA Effects:** The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.
CEQA Conclusion: During operation and maintenance of the proposed water conveyance facilities, the value of agricultural production in the Delta region would be reduced. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.13, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


NEPA Effects: Effects on regional economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-13 because the measures are similar. In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, implementation of these components are anticipated to result in the abandonment of natural gas wells, causing a decrease in employment and labor income associated with monitoring and maintaining wells, which would be considered an adverse effect. Mitigation Measure MIN-5, described in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5, would be available to reduce these effects by minimizing, to the extent feasible, the need for well abandonment or relocation.

CEQA Conclusion: Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production activities. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impacts AG-3 and AG-4; changes in recreation-related activities are addressed in Chapter 15, Recreation, Section 15.3.3.2, Impacts REC-9 through REC-11; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5.
Impact ECON-14: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on population and housing as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-14 because the measures are similar. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired.

NEPA Effects: Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

CEQA Conclusion: Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes to the physical environment are not anticipated to result.

Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Effects on community character as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-15 because the measures are similar. While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects, including effects on community cohesion, could also arise in those communities closest to character-changing effects and those most heavily influenced by agricultural activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-15.

CEQA Conclusion: Implementation of Conservation Measures 2–22 under Alternative 6C could affect community character within the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character are related to physical impacts involving population growth, these impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Under Alternative 6C, effects on local government fiscal conditions as a result of conservation measure implementation would be similar to those described under Alternative 1A, Impact ECON-16. Conservation Measures 2–22 would remove some private land from local property tax and assessment rolls. This economic effect would be considered adverse; however, the BDCP proponents would offset forgone property tax and assessments levied by local governments and special districts on private lands converted to habitat.
**CEQA Conclusion:** Under Alternative 6C, implementation of Conservation Measures 2–22 would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated to reach $176.7 million. However, the BDCP proponents would compensate local governments and special districts for forgone revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131).

**Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the Proposed Conservation Measures 2–22**

**NEPA Effects:** Effects related to implementation of the Conservation Measures 2–22 under this alternative would be similar to those described under Alternative 1A, Impact ECON-17. These measures may result in adverse and beneficial effects on recreational resources in the Delta region, resulting in the potential for decreased or increased economic activities related to recreation.

**CEQA Conclusion:** Implementation of conservation measures would limit opportunities for recreation and compromise the quality of activities, leading to potential economic impacts. However, over time, implementation could also improve the quality of existing recreational opportunities, creating increased economic value with respect to recreation. This section considers only the economic effects of recreational changes brought about by conservation measure implementation. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, *Recreation*, Section 15.3.3.13, Impacts REC-9 through REC-11.

**Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22**

Effects on agricultural economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-18 because the measures are similar. Conservation Measures 2–22 would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14, *Agricultural Resources*, Section 14.3.3.13, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents would provide compensation to property owners for losses due to implementation of the alternative.

**NEPA Effects:** Because implementation of Conservation Measures 2–22 would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.13, Impacts AG-3 and
AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1.

**Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions**

**NEPA Effects:** The socioeconomic effects associated with operation of Alternative 6C would be the same as those described under Alternative 6A, Impact ECON-19, because deliveries would be based on the same operational guidelines. Changes in deliveries to hydrologic regions could result in adverse or beneficial socioeconomic effects in these areas. Reduced or less reliable water deliveries would result in decreased agricultural production and, in turn, a reduction in both direct and indirect agricultural employment. Economic and social patterns tied to predominant agricultural industrial activities and land uses could erode, changing the character of agricultural communities in hydrologic regions. If M&I deliveries were reduced to the extent that it would, in the long run, constrain population growth, implementation of Alternative 6C could reinforce a socioeconomic status quo or limit potential economic and employment growth in hydrologic regions. Changes to agricultural production and population growth with its associated economic activity could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, limited growth associated with reduced deliveries could require lower expenditures for local governments while also leading to reduced revenue.

**CEQA Conclusion:** Operation of water conveyance facilities under Alternative 6C could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.

16.3.3.14 **Alternative 7—Dual Conveyance with Pipeline/Tunnel, Intakes 2, 3, and 5, and Enhanced Aquatic Conservation (9,000 cfs; Operational Scenario E)**

Facilities constructed under Alternative 7 would be similar to those described for Alternative 1A but with only three intakes as opposed to five. Operations would be different under Alternative 7 than under Alternative 1A.

**Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

The regional economic effects on employment and income in the Delta region during construction were evaluated. Changes are shown relative to the Existing Conditions and the No Action Alternative (regional economic conditions do not differ between Existing Conditions and No Action Alternative). The effects on employment and income are displayed in Table 16-51. The table shows the direct and total changes that would result from conveyance-related spending. As evident in Table 16-51,
spending on conveyance construction would result in substantial economic activity in the region. As shown, direct construction employment is anticipated to vary over the 8-year construction period, with an estimated 2,018 FTE jobs in the first year and 129 FTE jobs in the final year of the construction period. Construction employment is estimated to peak at 3,360 FTE jobs in year 4. Total employment (direct, indirect, and induced) would peak in year 1, at 11,018 FTE jobs.

Table 16-51. Regional Economic Effects on Employment and Labor Income during Construction (Alternative 7)

<table>
<thead>
<tr>
<th>Regional Economic Impact&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Year</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td><strong>Employment (FTE)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>2,018</td>
<td>2,256</td>
<td>3,141</td>
<td>3,360</td>
<td>2,937</td>
<td>2,763</td>
<td>547</td>
<td>129</td>
<td>17,152</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>11,018</td>
<td>9,174</td>
<td>10,635</td>
<td>9,729</td>
<td>7,264</td>
<td>5,811</td>
<td>923</td>
<td>183</td>
<td>54,737</td>
</tr>
<tr>
<td><strong>Labor Income</strong> (million $)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>298.7</td>
<td>220.6</td>
<td>229.9</td>
<td>186.1</td>
<td>125.9</td>
<td>74.0</td>
<td>6.4</td>
<td>0.3</td>
<td>1,141.9</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>537.9</td>
<td>409.8</td>
<td>440.1</td>
<td>369.9</td>
<td>251.1</td>
<td>170.6</td>
<td>19.9</td>
<td>2.6</td>
<td>2,201.8</td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).

<sup>a</sup> IMPLAN results are changes relative to Existing Condition or No Action Alternative.

<sup>b</sup> Includes direct, indirect, and induced effects; numbers may not sum to the total due to rounding.

Detailed estimates are presented in Appendix 16A, *Regional Economic Impacts of Water Conveyance Facility Construction*.

The footprint of conveyance and related facilities such as roads and utilities would remove some existing agricultural land from production, so the effects on employment and income would be negative. The regional economic effects on employment and income in the Delta region from the change in agricultural production are reported in Table 16-52. As shown, direct agricultural employment would be reduced by an estimated 25 FTE jobs, while total employment (direct, indirect, and induced) associated with agricultural employment would fall by 94 FTE jobs. Mapbook Figures M14-1 and M14-2 display areas of Important Farmland and lands under Williamson Act contracts that could be converted to other uses due to the construction of water conveyance facilities for the Pipeline/Tunnel alignment. Note that not all of these structures would be constructed under this alternative.
Table 16-52. Regional Economic Effects on Agricultural Employment and Labor Income during Construction (Alternative 7)

<table>
<thead>
<tr>
<th>Regional Economic Impact&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Impacts on Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment (FTE)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-25</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-94</td>
</tr>
<tr>
<td><strong>Labor Income</strong> (million $)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-3.1</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>-6.1</td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).
<sup>a</sup> IMPLAN results are changes relative to Existing Condition or No Action Alternative.
<sup>b</sup> Includes direct, indirect, and induced effects.

Additionally, the Alternative 7 construction footprint would result in the abandonment of an estimated six producing natural gas wells in the study area, as described in Chapter 26, *Mineral Resources*, Section 26.3.3.14, Impact MIN-1. This could result in the loss of employment and labor income associated with monitoring and maintaining these wells. Generally, small crews perform ongoing monitoring and maintenance of several wells at a time. As shown in Chapter 26, *Mineral Resources*, Table 26-3, 516 active producer wells are located in the study area. Even if all six producing wells in the Alternative 7 construction footprint were abandoned and not replaced with new wells installed outside the construction footprint, the percentage reduction in the number of natural gas wells would be very small. As a result, the employment and labor income effects associated with well abandonment, while negative, would be minimal.

**NEPA Effects**: Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion**: Construction of the proposed water conveyance facilities would temporarily increase total employment and income in the Delta region. The change would result from expenditures on construction, increasing employment, and from changes in agricultural production, decreasing employment. Changes in recreational expenditures and natural gas well operations could also affect regional employment and income, but these have not been quantified. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.14, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.14, REC-1 through REC-4; abandonment of natural gas wells is addressed in Chapter 26, *Mineral Resources*, Section 26.3.3.14, Impact MIN-1. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative.

While the compensation to property owners would reduce the severity of economic effects related
to the loss of agricultural land, it would not constitute mitigation for any related physical impact.

Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

**Population**

Construction of conveyance facilities would require an estimated peak of 3,360 workers in year 4 of the assumed 8-year construction period. It is anticipated that many of these new jobs would be filled from within the existing five-county labor force. However, construction of the tunnels may require specialized worker skills not readily available in the local labor pool. As a result, it is anticipated that some specialized workers may be recruited from outside the five-county region.

Considering the multi-year duration of conveyance facility construction, it is anticipated that non-local workers would temporarily relocate to the five-county region, thus adding to the local population. As discussed in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.1, Direct Growth Inducement, an estimated 30 percent of workers could come from out of the Delta region, suggesting that approximately 1,010 workers could relocate to the Delta region at the peak of the construction period. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Changes in demand for public services resulting from any increase in population are addressed in Chapter 20, *Public Services and Utilities*, Section 20.3.3.14, Impact UT-1 through UT-6.

**Housing**

Changes in housing demand are based on changes in supply resulting from displacement during facilities construction and changes in housing demand resulting from employment associated with construction of conveyance facilities. As described in Chapter 13, *Land Use*, Section 13.3.3.14, Impact LU-2, construction of water conveyance facilities under Alternative 7 would conflict with approximately 38 residential structures.

The construction workforce would most likely commute daily to the work sites from within the five-county region; however, if needed, there are about 53,000 housing units available to accommodate workers who may choose to commute to on a workweek basis or who may choose to temporarily relocate to the region for the duration of the construction period, including the estimated 1,010 workers who may temporarily relocate to the Delta region from out of the region. In addition to the available housing units, there are recreational vehicle parks and hotels and motels within the five-county region to accommodate any construction workers. As a result, and as discussed in more detail in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.1, Direct Growth Inducement, construction of the proposed conveyance facilities is not expected to substantially increase the demand for housing within the five-county region.

**NEPA Effects:** Within specific local communities, there could be localized effects on housing. However, given the availability of housing within the five-county region, predicting where this impact might fall would be speculative. In addition, new residents would likely be dispersed across the region, thereby not creating a burden on any one community.
Because these activities would not result in permanent concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population. Therefore, the minor increase in housing is not anticipated to lead to adverse physical changes to the environment.

**Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 7, effects on community character would be similar in nature to those described under Alternative 1A, Impact ECON-3. However, the intensity of these effects would be reduced due to the construction of three intake facilities. As such, regional population and employment would increase to levels described above under Impact ECON-1 and ECON-2. While water conveyance construction could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise as a result of declining economic stability or changes in community cohesion in communities closest to construction effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, *Environmental Commitments*). These actions are summarized under Alternative 1A, Impact ECON-3.

**CEQA Conclusion:** Construction of water conveyance facilities under Alternative 7 could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-2 and in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment. However, implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see Appendix 3B, *Environmental Commitments*). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito Management Plans.

**Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 7, publicly-owned water conveyance facilities would be constructed on land of which some is currently held by private owners. Property tax and assessment revenue forgone as a result of water conveyance facilities is estimated at $7.9 million over the construction period. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the BDCP, such as reclamation districts where conveyance facilities and associated work areas are proposed. This economic effect would be considered adverse; however, the BDCP proponents would make arrangements to
compensate local governments for the loss of property tax or assessment revenue for land used for constructing, locating, operating, or mitigating for new Delta water conveyance facilities. Additionally, as discussed under Impact ECON-1, construction of the water conveyance facilities would be anticipated to result in a net temporary increase of income and employment in the Delta region. This would also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Under Alternative 7, construction of water conveyance facilities would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the construction period, property tax and assessment revenue forgone is estimated at $7.9 million. However, the Sacramento-San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 7, disruption of recreational activities during the construction period would be similar in character to that described under Alternative 1A, Impact ECON-5. However, fewer intake facilities would be constructed under this alternative, resulting in less severe effects relative to Alternative 1A. While access to recreational facilities would be maintained throughout construction, the quality of recreational activities including boating, fishing, waterfowl hunting, and hiking in the Delta could be indirectly affected by noise, lighting, traffic, and visual degradation in proximity to water conveyance construction.

Construction of water conveyance structures under this alternative would be anticipated to result in a lower-quality recreational experience in a number of localized areas throughout the Delta, despite the implementation of mitigation measures, including enhancement of fishing access sites and incorporation of recreational access into project design, and environmental and non-environmental commitments, including providing funding to implement recreational improvements and control aquatic weeds, providing notification of maintenance activities in waterways, and developing and implementing a noise abatement plan, as described in Appendix 3B, *Environmental Commitments*. With a decrease in recreational quality, the number of visits would be anticipated to decline, at least in areas closest to construction activities. The multi-year schedule and geographic scale of construction activities and the anticipated decline in recreational spending would be considered an adverse effect. The commitments and mitigation measure cited above would contribute to the reduction of this effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities under Alternative 7 could impact recreational revenue in the Delta region if construction activities result in fewer visits to the area. Fewer visits would be anticipated to result in decreased economic activity related to recreational activities. This section considers only the economic effects of recreational changes brought about by construction of the proposed water conveyance facilities. Potential physical
changes to the environment relating to recreational resources are described and evaluated in Chapter 15, *Recreation*, Section 15.3.3.14, Impacts REC-1 through REC-4.

**Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Construction of conveyance facilities would convert land from existing agricultural uses to uses that include direct facility footprints, construction staging areas, borrow/spoils areas, RTM storage, temporary and permanent roads, and utilities. Agricultural land could also be affected by changes in water quality and other conditions that would affect crop productivity. These direct effects on agricultural land are described in Chapter 14, *Agricultural Resources*, Section 14.3.3.14, Impacts AG-1 and AG-2.

Changes in crop acreage were used to describe the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, *Environmental Setting/Affected Environment*. Table 16-53 summarizes the changes in acreage and value of agricultural production that would result in the Delta region as a result of Alternative 7 construction. Changes are shown relative to the Existing Conditions and the No Action Alternative by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The table also includes a summary of changes in crop acreages that are reported in greater detail in Appendix 14A, *Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction*.

Total value of irrigated crop production in the Delta would decline on average by $8.7 million per year during the construction period, with total irrigated crop acreage declining by about 5,300 acres. These estimates are not dependent on water year type.

**Table 16-53. Crop Acres and Value of Agricultural Production in the Delta during Construction (Alternative 7)**

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 7</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>478.3</td>
<td>-5.3</td>
</tr>
<tr>
<td>Grains</td>
<td>58.1</td>
<td>-0.6</td>
</tr>
<tr>
<td>Field crops</td>
<td>189.5</td>
<td>-1.6</td>
</tr>
<tr>
<td>Forage crops</td>
<td>111.5</td>
<td>-1.2</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>76.6</td>
<td>-0.5</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>42.7</td>
<td>-1.4</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>641.4</td>
<td>-8.7</td>
</tr>
<tr>
<td>Grains</td>
<td>24.0</td>
<td>-0.2</td>
</tr>
<tr>
<td>Field crops</td>
<td>112.8</td>
<td>-1.0</td>
</tr>
<tr>
<td>Forage crops</td>
<td>72.1</td>
<td>-1.0</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>266.5</td>
<td>-1.8</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>165.9</td>
<td>-4.7</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).
Alternative 7 may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints and longer travel times due to facilities construction. Construction designs and costs have provided for such costs in two ways. In most cases, affected lands fall within the facilities footprint, and are included in the agricultural acreage and value of production described elsewhere in this chapter and in Chapter 14, *Agricultural Resources*, Section 14.3.3.14, Impacts AG-1 and AG-2. For potentially affected lands not included in the facilities footprint, conveyance construction costs include temporary and permanent roads, bridges, and other facilities as needed to service agricultural lands (California Department of Water Resources 2010a, 2010b). There could be some additional travel time and other costs associated with using these facilities, but such costs are not environmental impacts requiring mitigation.

Loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction. The value of structures and equipment potentially affected would vary widely across parcels. Much of the equipment is portable (e.g., machinery, tools, portable sprinkler pipe), and could be sold or used on other lands. Shop and storage buildings and permanent irrigation and drainage equipment plus orchards and vineyards may have little or no salvage value. The negotiated purchase of lands for the conveyance and associated facilities would compensate for some, but perhaps not all of that value. According to Cooperative Extension cost of production studies (University of California Cooperative Extension 2003a, 2003b, 2004, 2005, 2006a, 2006b, 2007a, 2007b, 2008a, 2008b, 2008c, 2008d), permanent structures, irrigation systems, and drainage systems can represent a wide range of investment, from less than $100 per acre for field and vegetable crops up to over $3,000 per acre for some orchards. Most such investments would not be new, so their depreciated values would be substantially lower.

Investment in standing orchards and vineyards would also be considered during negotiations for land purchases. Typical investments required to bring permanent crops into production are shown in Section 16.1, *Environmental Setting/Affected Environment*. For example, the establishment of wine grapes requires an investment of over $15,000 per acre and Bartlett pears require over $20,000 per acre. Forage crops such as irrigated pasture and alfalfa may require an establishment cost of about $400 per acre. The depreciated values of the growing stock could be substantially below these establishment costs, depending on the ages of the stands that would be affected.

Only minor changes in salinity of agricultural water supply are expected during construction. Consequently, costs related to salinity changes would also be minor. Further discussion of effects from changes in salinity is presented in Chapter 14, *Agricultural Resources*, Section 14.3.3.14, Impacts AG-1 and AG-2.

**NEPA Effects:** Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.14, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS.
required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on regional economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-7. Increased expenditures related to operation and maintenance of water conveyance facilities would be expected to result in a permanent increase in regional employment and income, as presented in Table 16-22. The permanent removal of agricultural land following construction would have lasting negative effects on agricultural employment and income, as shown in Table 16-23.

**NEPA Effects:** Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would increase total employment and income in the Delta region. The net change would result from expenditures on operation and maintenance and from changes in agricultural production. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.14, Impacts AG-3 and AG-4; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.14, Impacts REC-5 through REC-8. When required, DWR would provide compensation to landowners as a result of acquiring lands for the proposed conveyance facilities. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on population and housing during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-
8. It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. It is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population and therefore adverse changes in the physical environment are not anticipated.

**Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 7, effects on community character would be similar in nature, location, and magnitude to those described under Alternative 1A, Impact ECON-9. However, the intensity of these effects would be reduced based on the operation and maintenance of three intake facilities. While water conveyance operation and maintenance could result in beneficial effects relating to the economic welfare of a community, lasting adverse social effects, including effects on community cohesion, could also arise in communities closest to physical features and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-9.

**CEQA Conclusion:** Operation and maintenance of water conveyance facilities under Alternative 7 could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-8 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

**Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Effects on tax revenue as a result of ongoing water conveyance operations under Alternative 4 would be similar to those described under Alternative 1A, Impact ECON-10. However, with the construction of fewer intake facilities, forgone revenue is estimated at $47.3 million over the 50-year permit period. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the BDCP. This economic effect would be adverse; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for constructing, locating, operating, or mitigating for new Delta water conveyance facilities. Additionally, as discussed under Impact ECON-7, continued operation and maintenance of the water conveyance facilities would be anticipated to result in a net increase of income and employment in...
the Delta region. This could also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Under Alternative 7, the ongoing operation and maintenance of water conveyance facilities would restrict property tax revenue levels for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated at $47.3 million. However, the Sacramento-San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Effects on recreation economics during operation and maintenance of the proposed water conveyance facilities under Alternative 7 would be similar to those described under Alternative 1A, Impact ECON-11.

**NEPA Effects:** Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. Because effects of facility maintenance would be short-term and intermittent, substantial economic effects are not anticipated to result from operation and maintenance of the facilities.

**CEQA Conclusion:** Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 7 are anticipated to create minor effects on recreational resources and therefore, are not expected to substantially reduce economic activity related to recreational activities. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, *Recreation*, Section 15.3.3.14, Impacts REC-5 through REC-8.

**Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

During operation and maintenance of conveyance facilities existing agricultural land would be in uses that include direct facility footprints and associated permanent roads and utilities. Agricultural land could also be affected by changes in water quality and other conditions that would affect crop productivity. These direct effects on agricultural land are described in Chapter 14, *Agricultural Resources*, Section 14.3.3.14, Impacts AG-1 and AG-2.

Changes in crop acreage were used to estimate the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, *Environmental Setting/Affected Environment*. Table 16-54 summarizes the changes in acreage and value of agricultural production that would result in the Delta region during operation of Alternative 7. Changes are shown relative to the Existing Conditions and the No Action Alternative by aggregate
crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The changes in crop acreages are reported in greater detail in Appendix 14A, *Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction*.

Total value of irrigated crop production in the Delta region would decline on average by $7.2 million per year during operation and maintenance, with total irrigated crop acreage declining by about 4,400 acres. These estimates are not dependent on water year type.

**Table 16-54. Crop Acres and Value of Agricultural Production in the Delta during Operations and Maintenance (Alternative 7)**

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 7</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>479.3</td>
<td>-4.4</td>
</tr>
<tr>
<td>Grains</td>
<td>58.3</td>
<td>-0.4</td>
</tr>
<tr>
<td>Field crops</td>
<td>189.8</td>
<td>-1.3</td>
</tr>
<tr>
<td>Forage crops</td>
<td>111.6</td>
<td>-1.1</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>76.7</td>
<td>-0.4</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>42.8</td>
<td>-1.2</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>642.8</td>
<td>-7.2</td>
</tr>
<tr>
<td>Grains</td>
<td>24.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>Field crops</td>
<td>113.1</td>
<td>-0.8</td>
</tr>
<tr>
<td>Forage crops</td>
<td>72.2</td>
<td>-0.9</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>266.9</td>
<td>-1.5</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>166.7</td>
<td>-3.9</td>
</tr>
</tbody>
</table>

*Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).*

Alternative 7 may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be associated with operational constraints and longer travel times due to permanent facilities. In most cases, affected lands fall within the facilities footprint, and are included in the agricultural acreage and value of production described elsewhere in this Chapter and in Chapter 14, *Agricultural Resources*, Section 14.3.3.14.

Crop yields and crop selection on lands in the Delta could be affected by changes in salinity of agricultural water supply during operation and maintenance activities. If operation of the proposed conveyance facilities increases salinity in part of the Delta, crops that are more sensitive to salinity could shift to other lands in the five-county Delta region. See Chapter 14, *Agricultural Resources*, Section 14.3.3.14, Impact AG-2, for further discussion of effects from changes in salinity.

**NEPA Effects:** The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** During operation and maintenance of the proposed water conveyance facilities the value of agricultural production in the Delta region would be reduced. The permanent removal
agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.14, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical effect. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


*NEPA Effects:* Effects on regional economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-13. However, the magnitude of effects related specifically to CM6, Channel Margin Habitat Enhancement, would be larger, as this alternative would enhance 40 linear miles rather than 20 linear miles. Additionally, this alternative would restore 20,000 acres of seasonally-inundated floodplain under CM5, rather than 10,000 acres. In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, implementation of these components are anticipated to result in the abandonment of natural gas wells, causing a decrease in employment and labor income associated with monitoring and maintaining wells, which would be considered an adverse effect. Mitigation Measure MIN-5, described in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5, would be available to reduce these effects by minimizing, to the extent feasible, the need for well abandonment or relocation.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production activities. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impacts AG-3 and AG-4; changes in recreation-related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.2, Impacts REC-9 through REC-11; abandonment of natural gas wells is addressed in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5.
Impact ECON-14: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on population and housing as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-14. However, the magnitude of effects related specifically to CM6, Channel Margin Habitat Enhancement, would be larger, as this alternative would enhance 40 linear miles rather than 20 linear miles. Additionally, this alternative would restore 20,000 acres of seasonally-inundated floodplain under CM5, rather than 10,000 acres. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired.

NEPA Effects: Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

CEQA Conclusion: Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes to the physical environment are not anticipated to result.

Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Effects on community character as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-15. However, the magnitude of effects related specifically to CM6, Channel Margin Habitat Enhancement, would be larger, as this alternative would enhance 40 linear miles rather than 20 linear miles. Additionally, this alternative would restore 20,000 acres of seasonally-inundated floodplain under CM5, rather than 10,000 acres. While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects, including effects on community cohesion, could also arise in those communities closest to character-changing effects and those most heavily influenced by agricultural activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-15.

CEQA Conclusion: Implementation of Conservation Measures 2–22 under Alternative 7 could affect community character within the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character are related to physical impacts involving population growth, these impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.
Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing the Proposed Conservation Measures 2–22

**NEPA Effects:** Under Alternative 7, effects on local government fiscal conditions as a result of conservation measure implementation would be anticipated to be greater than those described under Alternative 1A, Impact ECON-16. Under this alternative, 20,000 acres would be restored under CM5, rather than 10,000 acres. Forgone revenue would be estimated to reach $186.6 million. Conservation Measures 2–22 would remove some private land from local property tax and assessment rolls. This economic effect would be considered adverse; however, the BDCP proponents would offset forgone property tax and assessments levied by local governments and special districts on private lands converted to habitat.

**CEQA Conclusion:** Under Alternative 7, implementation of Conservation Measures 2–22 would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated to reach $186.6 million. However, the BDCP proponents would compensate local governments and special districts for forgone revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131).

Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the Proposed Conservation Measures 2–22

**NEPA Effects:** Effects related to implementation of the Conservation Measures 2–22 under this alternative would be similar to those described under Alternative 1A, Impact ECON-17. However, the magnitude of effects related specifically to CM6, Channel Margin Habitat Enhancement, would be larger, as this alternative would enhance 40 linear miles rather than 20 linear miles. Additionally, this alternative would restore 20,000 acres of seasonally-inundated floodplain under CM5, rather than 10,000 acres. Conservation Measures 2–22 may result in adverse and beneficial effects on recreational resources in the Delta region, resulting in the potential for decreased or increased economic activities related to recreation.

**CEQA Conclusion:** Implementation of conservation measures would limit opportunities for recreation and compromise the quality of activities, leading to potential economic impacts. However, over time, implementation could also improve the quality of existing recreational opportunities, creating increased economic value with respect to recreation. This section considers only the economic effects of recreational changes brought about by conservation measure implementation. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.14, Impacts REC-9 through REC-11.

Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on agricultural economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-18, but would extend to 10,000 additional acres of seasonally-inundated floodplain under CM5 and 20 additional linear miles of channel margin habitat under CM6. Conservation Measures 2–22 would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14,
Agricultural Resources, Section 14.3.3.14, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents would provide compensation to property owners for losses due to implementation of the alternative.

NEPA Effects: Because implementation of the Conservation Measures 2–22 would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.14, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1.

Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions

The socioeconomic effects associated with operation of Alternative 7 would be similar to those described under Alternative 6A, Impact ECON-19, because deliveries would be also be reduced based on operational guidelines. In this case, however, the construction of three intakes and diversion restrictions associated with operational Scenario E would lead to reduced deliveries.

Changes in SWP Deliveries Compared to No Action Alternative

Compared to No Action Alternative (2060), Alternative 7 would decrease deliveries to the hydrologic regions. Compared to the No Action Alternative (2060), South Coast would receive the largest net decrease (up to 268 TAF of Table A plus Article 21 deliveries) among the regions, which represents 76% of the decrease in Table A plus Article 21 M&I deliveries under Alternative 7 (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-16, for more information).

Changes in CVP Deliveries Compared to No Action Alternative

Alternative 7 would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to the No Action Alternative (2060), Alternative 7 would result in decreased deliveries to the other hydrologic regions. Compared to the No Action Alternative (2060) San Francisco Bay is projected to receive the largest potential decrease (approximately 8 TAF) among the hydrologic regions (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-17 for more information).
**NEPA Effects:** Changes in deliveries to hydrologic regions could result in adverse or beneficial socioeconomic effects in these areas. Reduced or less reliable water deliveries would result in decreased agricultural production and, in turn, a reduction in both direct and indirect agricultural employment. Economic and social patterns tied to predominant agricultural industrial activities and land uses could erode, changing the character of agricultural communities in hydrologic regions. If M&I deliveries were reduced to the extent that it would, in the long run, constrain population growth, implementation of Alternative 7 could reinforce a socioeconomic status quo or limit potential economic and employment growth in hydrologic regions. Changes to agricultural production and population growth with its associated economic activity could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, limited growth associated with reduced deliveries could require lower expenditures for local governments while also leading to reduced revenue.

**CEQA Conclusion:** As described above, the operational components of BDCP Conservation Measure 1 could result in a number of effects in areas receiving SWP and CVP water deliveries outside of the Delta.

**Changes in SWP Deliveries Compared to Existing Conditions**

Compared to Existing Conditions, Alternative 7 would decrease deliveries to all hydrologic regions except for the San Joaquin River Region, which would experience no change in deliveries. South Coast would receive the largest net decrease (up to 337 TAF of Table A plus Article 21 deliveries) among the regions, which represents 73% of the decrease in Table A plus Article 21 M&I deliveries under Alternative 7 (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-16 for more information).

**Changes in CVP Deliveries Compared to Existing Conditions**

Alternative 7 would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan, and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to Existing Conditions, Alternative 7 would result in decreased deliveries to the other hydrologic regions. Compared to Existing Conditions, San Francisco Bay is projected to receive the largest decrease (up to 16 TAF) among the hydrologic regions (refer to Chapter 30, *Growth Inducement and Other Indirect Effects*, Table 30-17 for more information).

**Summary**

Operation of water conveyance facilities under Alternative 7 could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.
Facilities constructed under Alternative 8 would be similar to those described for Alternative 1A but with only three intakes as opposed to five. Operations would be different under Alternative 8 than under Alternative 1A.

**Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

Temporary effects on regional economics during construction of the proposed water conveyance facilities would be identical to those described under Alternative 7, Impact ECON-1. As shown in Table 16-51, over the construction period, regional effects of construction activities would result in direct employment of more than 17,000 FTE, with total employment effects of nearly 55,000 FTE. Increases in labor income associated with this employment would also be expected. Declines in agricultural production would be expected to lead to a decrease in employment of 25 FTE, with total effects leading to a decline of 94 FTE. Similarly, labor income related to these positions would decline, as shown in Table 16-52.

**NEPA Effects:** Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would increase total employment and income in the Delta region, temporarily. The increase in employment and income that would result from expenditures on construction would be greater than the reduction in employment and income attributable to losses in agricultural production. Changes in recreational expenditures and natural gas well operations could also affect regional employment and income, but these have not been quantified. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.15, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.15, REC-1 through REC-4; abandonment of natural gas wells is addressed in Chapter 26, *Mineral Resources*, Section 26.3.3.15, Impact MIN-1. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.
Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities

Effects on population and housing during construction of the proposed water conveyance facilities would be identical to those described under Alternative 7, Impact ECON-2. It is anticipated that non-local workers would temporarily relocate to the Delta region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Within specific local communities, there could be localized effects on housing. However, given the availability of housing within the five-county region, predicting where this impact might fall would be speculative. In addition, new residents would likely be dispersed across the region, thereby not creating a substantial burden on any one community.

NEPA Effects: Because these activities would not result in permanent concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

CEQA Conclusion: Construction of the proposed water conveyance facilities would result in minor temporary population increases in the Delta region, which has an adequate housing supply to accommodate the change in population. Therefore, adverse physical changes resulting from the minor increase in population are not anticipated.

Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed Water Conveyance Facilities

NEPA Effects: Under Alternative 8, effects on community character would be identical to those described under Alternative 7, Impact ECON-3. However, the intensity of these effects would be reduced due to the construction of three intake facilities. As such, regional population and employment would increase to levels described above under Impact ECON-1 and ECON-2. While water conveyance construction could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise as a result of declining economic stability or changes in community cohesion in communities closest to construction effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce the intensity of adverse effects on the character of Delta communities (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-3.

CEQA Conclusion: Construction of water conveyance facilities under Alternative 8 could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-2 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment. However, implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise...

**Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Effects on tax revenue as a result of water conveyance construction under Alternative 8 would be identical to those described under Alternative 7, Impact ECON-4. While this economic effect would be considered adverse, BDCP proponents would compensate local governments for the loss of property tax or assessment revenue associated with construction of water conveyance facilities. Additionally, local entities could benefit from an increase in sales tax revenue.

**CEQA Conclusion:** Construction of water conveyance facilities for Alternative 8 would result in the removal of a portion of the property tax base for various local government entities in the Delta region. However, entities receiving water from the State Water Project and federal Central Valley Project would mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 8, disruption of recreational activities during the construction period would be similar to that described under Alternative 1A, Impact ECON-5. However, fewer intake facilities would be constructed under this alternative, resulting in less severe effects relative to Alternative 1A. While access to recreational facilities would be maintained throughout construction, the quality of recreational activities including boating, fishing, waterfowl hunting, and hiking in the Delta could be indirectly affected by noise, lighting, traffic, and visual degradation in proximity to water conveyance construction.

Construction of water conveyance structures under this alternative would be anticipated to result in a lower-quality recreational experience in a number of localized areas throughout the Delta, despite the implementation of mitigation measures, including enhancement of fishing access sites and incorporation of recreational access into project design, and environmental and non-environmental commitments, including providing funding to implement recreational improvements and control aquatic weeds, providing notification of maintenance activities in waterways, and developing and implementing a noise abatement plan, as described in Appendix 3B, *Environmental Commitments*. With a decrease in recreational quality, the number of visits would be anticipated to decline, at least in areas closest to construction activities. The multi-year schedule and geographic scale of construction activities and the anticipated decline in recreational spending would be considered an adverse effect. The commitments and mitigation measure cited above would contribute to the reduction of this effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities under Alternative 8 could impact recreational revenue in the Delta region if construction activities result in fewer visits.
to the area. Fewer visits would be anticipated to result in decreased economic activity related to recreational activities. This section considers only the economic effects of recreational changes brought about by construction of the proposed water conveyance facilities. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.15, Impacts REC-1 through REC-4.

Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of the Proposed Water Conveyance Facilities

Effects on agricultural economics during construction of the proposed water conveyance facilities would be identical to those described under Alternative 7, Impact ECON-6. Total value of irrigated crop production in the Delta would decline on average by $8.7 million per year during the construction period, with total irrigated crop acreage declining by about 5,300 acres. Alternative 8 may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints and longer travel times due to facilities construction. Additionally, loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction.

NEPA Effects: Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.15, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

Permanent effects on regional economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-7. Increased expenditures related to operation and maintenance of water conveyance facilities would be expected to result in a permanent increase in regional employment and income, as presented in Table 16-22. The permanent removal of agricultural land following construction would have lasting negative effects on agricultural employment and income, as shown in Table 16-23.

NEPA Effects: Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered...
a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would increase total employment and income in the Delta region. The net change would result from expenditures on operation and maintenance and from changes in agricultural production. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.15, Impacts AG-3 and AG-4; changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.3.15, Impacts REC-5 through REC-8. When required, DWR would provide compensation to landowners as a result of acquiring lands for the proposed conveyance facilities. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on population and housing during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 1A, Impact ECON-8. It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. It is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population and therefore adverse changes in the physical environment are not anticipated.

**Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 8, effects on community character would be similar in nature, location, and magnitude to those described under Alternative 1A, Impact ECON-9. However, the intensity of these effects would be reduced based on the operation and maintenance of three intake facilities. While water conveyance operation and maintenance could result in beneficial effects
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relating to the economic welfare of a community, lasting adverse social effects, including effects on community cohesion, could also arise in communities closest to physical features and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-9.

**CEQA Conclusion:** Operation and maintenance of water conveyance facilities under Alternative 8 could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-8 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

**Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Effects on tax revenue as a result of ongoing water conveyance operation and maintenance under Alternative 8 would be similar to those described under Alternative 7, Impact ECON-10. While this economic effect would be considered adverse, BDCP proponents would compensate local governments for the loss of property tax or assessment revenue associated with construction of water conveyance facilities. Additionally, local entities could benefit from an increase in sales tax revenue.

**CEQA Conclusion:** Continued operation and maintenance of water conveyance facilities for Alternative 8 would result in the removal of a portion of the property tax base for various local government entities in the Delta region. However, entities receiving water from the State Water Project and federal Central Valley Project would mitigate for lost property tax and assessment revenue associated with land needed for the siting of conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. Because effects of facility maintenance would be short-term and intermittent, substantial economic effects are not anticipated to result from operation and maintenance of the facilities.
**CEQA Conclusion:** Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 8 are anticipated to create minor effects on recreational resources and therefore, are not expected to substantially reduce economic activity related to recreational activities. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, *Recreation*, Section 15.3.3.15, Impacts REC-5 through REC-8.

**Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

Permanent effects on agricultural economics during operation and maintenance of the proposed water conveyance facilities would be similar to those described under Alternative 7, Impact ECON-12. Total value of irrigated crop production in the Delta would decline on average by $7.2 million per year during operation and maintenance, with total irrigated crop acreage declining by about 4,400 acres. Alternative 8 may also affect production costs on lands even if gross revenues are largely unaffected. Costs could be increased by operational constraints, changes in water quality, and longer travel times due to the permanent footprint of facilities. Additionally, loss of investments in production facilities and standing orchards and vineyards would occur as a result of facilities construction.

**NEPA Effects:** The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** During operation and maintenance of the proposed water conveyance facilities, the value of agricultural production in the Delta region would be reduced. The permanent removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.15, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


**NEPA Effects:** Effects on regional economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-13. In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and
maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, implementation of these components are anticipated to result in the abandonment of natural gas wells, causing a decrease in employment and labor income associated with monitoring and maintaining wells, which would be considered an adverse effect. Mitigation Measure MIN-5, described in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5, would be available to reduce these effects by minimizing, to the extent feasible, the need for well abandonment or relocation.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production activities. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impacts AG-3 and AG-4; changes in recreation-related activities are addressed in Chapter 15, Recreation, Section 15.3.3.2, Impacts REC-9 through REC-11; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5.

**Impact ECON-14:** Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on population and housing as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-14. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes to the physical environment are not anticipated to result.

**Impact ECON-15:** Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22

**NEPA Effects:** Effects on community character as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-15 because the measures are similar. While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects, including
effects on community cohesion, could also arise in those communities closest to character-changing
effects and those most heavily influenced by agricultural activities. Implementation of mitigation
measures and environmental commitments related to noise, visual effects, transportation,
agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental
Commitments). These actions are summarized under Alternative 1A, Impact ECON-15.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 under Alternative 8 could affect
community character within the Delta region. However, because these impacts are social in nature,
rather than physical, they are not considered impacts under CEQA. To the extent that changes to
community character are related to physical impacts involving population growth, these impacts are
described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore,
notable decreases in population or employment, even if limited to certain areas, sectors, or the
vacancy of individual buildings, could result in alteration of community character stemming from a
lack of maintenance, upkeep, and general investment.

**Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing
the Proposed Conservation Measures 2–22**

**NEPA Effects:** Under Alternative 8, effects on local government fiscal conditions as a result of
conservation measure implementation would be similar to those described under Alternative 1A,
Impact ECON-16. Conservation Measures 2–22 would remove some private land from local property
tax and assessment rolls. This economic effect would be considered adverse; however, the BDCP
proponents would offset forgone property tax and assessments levied by local governments and
special districts on private lands converted to habitat.

**CEQA Conclusion:** Under Alternative 8, implementation of Conservation Measures 2–22 would
result in the removal of a portion of the property tax base for various local government entities in
the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is
estimated to reach $176.7 million. However, the BDCP proponents would compensate local
governments and special districts for forgone revenue. CEQA does not require a discussion of
socioeconomic effects except where they would result in physical changes. If an alternative is not
anticipated to result in a physical change to the environment, it would not be considered to have a
significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131).

**Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the
Proposed Conservation Measures 2–22**

**NEPA Effects:** Effects related to implementation of Conservation Measures 2–22 under this
alternative would be similar to those described under Alternative 1A, Impact ECON-17. These
measures may result in adverse and beneficial effects on recreational resources in the Delta region,
resulting in the potential for decreased or increased economic activities related to recreation.

**CEQA Conclusion:** Implementation of conservation measures would limit opportunities for
recreation and compromise the quality of activities, leading to potential economic impacts.
However, over time, implementation could also improve the quality of existing recreational
opportunities, creating increased economic value with respect to recreation. This section considers
only the economic effects of recreational changes brought about by conservation measure
implementation. Potential physical changes to the environment relating to recreational resources
are described and evaluated in Chapter 15, *Recreation*, Section 15.3.3.15, Impacts REC-9 through
REC-11.
Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on agricultural economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-18. Conservation Measures 2–22 would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14, Agricultural Resources, Section 14.3.3.15, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents would provide compensation to property owners for losses due to implementation of the alternative.

NEPA Effects: Because implementation of the Conservation Measures 2–22 would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.15, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1.

Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions

The socioeconomic effects associated with operation of Alternative 8 would be similar to those described under Alternative 6A, Impact ECON-19, because deliveries would be also be reduced based on operational guidelines. In this case, however, the construction of three intakes and diversion restrictions associated with operational Scenario F would lead to reduced deliveries.

Changes in SWP Deliveries Compared to No Action Alternative

Compared to No Action Alternative (2060), Alternative 8 would decrease deliveries to the hydrologic regions. Compared to the No Action Alternative (2060), South Coast would receive the largest net decrease (up to 567 TAF of Table A plus Article 21 deliveries) among the regions, which represents 78% of the decrease in M&I deliveries under Alternative 8 (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-16, for more information).
Changes in CVP Deliveries Compared to No Action Alternative

Alternative 8 would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to the No Action Alternative (2060), Alternative 8 would result in decreased deliveries to the other hydrologic regions. Compared to the No Action Alternative (2060) San Francisco Bay is projected to receive the largest potential decrease (approximately 25 TAF) among the hydrologic regions (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-17 for more information).

NEPA Effects: Changes in deliveries to hydrologic regions could result in adverse or beneficial socioeconomic effects in these areas. Reduced or less reliable water deliveries would result in decreased agricultural production and, in turn, a reduction in both direct and indirect agricultural employment. Economic and social patterns tied to predominant agricultural industrial activities and land uses could erode, changing the character of agricultural communities in hydrologic regions. If M&I deliveries were reduced to the extent that it would, in the long run, constrain population growth, implementation of Alternative 8 could reinforce a socioeconomic status quo or limit potential economic and employment growth in hydrologic regions. Changes to agricultural production and population growth with its associated economic activity could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, limited growth associated with reduced deliveries could require lower expenditures for local governments while also leading to reduced revenue.

CEQA Conclusion: As described above, the operational components of BDCP Conservation Measure 1 could result in a number of effects in areas receiving SWP and CVP water deliveries outside of the Delta.

Changes in SWP Deliveries Compared to Existing Conditions

Compared to Existing Conditions, Alternative 8 would decrease deliveries to all hydrologic regions except for the San Joaquin River Region, which would experience no change in deliveries. South Coast would receive the largest net decrease (up to 636 TAF of Table A plus Article 21 deliveries) among the regions, which represents 72% of the decrease in M&I deliveries under Alternative 8 (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-16 for more information).

Changes in CVP Deliveries Compared to Existing Conditions

Alternative 8 would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan, and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to Existing Conditions, Alternative 8 would result in decreased deliveries to the other hydrologic regions. Compared to Existing Conditions, San Francisco Bay is projected to receive the largest decrease (up to 33 TAF) among the hydrologic regions (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-17 for more information).

Summary

Operation of water conveyance facilities under Alternative 8 could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic...
regions would lead to physical impacts, such impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.

16.3.3.16 Alternative 9—Through Delta/Separate Corridors (15,000 cfs; Operational Scenario G)

Facilities constructed under Alternative 9 would include two fish-screened intakes along the Sacramento River near Walnut Grove, fourteen operable barriers, two pumping plants and other associated facilities, two culvert siphons, three canal segments, new levees, and new channel connections. Some existing channels would also be enlarged under this alternative. Nearby areas would be altered as work or staging areas or used for the deposition of spoils.

Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities

The regional economic effects on employment and income in the Delta region during construction were evaluated. Changes are shown relative to the Existing Conditions and the No Action Alternative (regional economic conditions do not differ between Existing Conditions and No Action Alternative). The effects on employment and income are displayed in Table 16-55. The direct and total change is shown that would result from conveyance-related spending. As evident in Table 16-55, spending on conveyance construction would result in substantial economic activity in the region. As shown, direct construction employment is anticipated to vary over the 8-year construction period, with an estimated 1,922 FTE jobs in the first year and 85 FTE jobs in the final year of the construction period. Construction employment is estimated to peak at 3,209 FTE jobs in year 4. Total employment (direct, indirect, and induced) would also peak in year 4, at 6,371 FTE jobs.

Table 16-55. Regional Economic Effects on Employment and Labor Income during Construction (Alternative 9)

<table>
<thead>
<tr>
<th>Regional Economic Impact</th>
<th>Year</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment (FTE)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1,922</td>
<td></td>
<td>2,146</td>
<td>3,087</td>
<td>3,209</td>
<td>2,277</td>
<td>2,798</td>
<td>318</td>
<td>85</td>
<td>15,843</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>4,227</td>
<td>4,446</td>
<td>6,209</td>
<td>6,371</td>
<td>4,190</td>
<td>5,073</td>
<td>598</td>
<td>117</td>
<td>31,232</td>
</tr>
<tr>
<td>Labor Income (million $)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58.1</td>
<td></td>
<td>55.1</td>
<td>72.5</td>
<td>72.3</td>
<td>39.4</td>
<td>45.7</td>
<td>6.0</td>
<td>0.0</td>
<td>349.0</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>129.9</td>
<td>128.5</td>
<td>173.4</td>
<td>175.1</td>
<td>104.1</td>
<td>123.3</td>
<td>15.3</td>
<td>1.4</td>
<td>851.1</td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).

- IMPLAN results are changes relative to Existing Condition or No Action Alternative.
- Includes direct, indirect, and induced effects; numbers may not sum to the total due to rounding.
- Detailed estimates are presented in Appendix 16A, Regional Economic Impacts of Water Conveyance Facility Construction.

The footprint of conveyance and related facilities such as roads and utilities would remove some existing agricultural land from production, so the effects on employment and income would be negative. The regional economic effects on employment and income in the Delta region from the change in agricultural production are reported in Table 16-56. As shown, direct agricultural
employment would be reduced by an estimated 10 FTE jobs, while total employment (direct, indirect, and induced) associated with agricultural employment would fall by 38 FTE jobs. Mapbook Figures M14-9 and M14-10 display areas of Important Farmland and lands under Williamson Act contracts that could be converted to other uses due to the construction of water conveyance facilities for the Through Delta/Separate Corridors alignment.

Table 16-56. Regional Economic Effects on Agricultural Employment and Labor Income during Construction (Alternative 9)

<table>
<thead>
<tr>
<th>Regional Economic Impact</th>
<th>Impacts on Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment (FTE)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-10</td>
</tr>
<tr>
<td>Total(^b)</td>
<td>-38</td>
</tr>
<tr>
<td>Labor Income (million $)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-1.2</td>
</tr>
<tr>
<td>Total(^b)</td>
<td>-2.4</td>
</tr>
</tbody>
</table>

Note: Labor income is reported 2011 dollars (U.S. Department of Commerce 2012).
\(^a\) IMPLAN results are changes relative to Existing Condition or No Action Alternative.
\(^b\) Includes direct, indirect, and induced effects.

Additionally, the Alternative 9 construction footprint would result in the abandonment of an estimated two producing natural gas wells in the study area, as described in Chapter 26, Mineral Resources, Section 26.3.3.16, Impact MIN-1. This could result in the loss of employment and labor income associated with monitoring and maintaining these wells. Generally, small crews perform ongoing monitoring and maintenance of several wells at a time. As shown in Chapter 26, Mineral Resources, Table 26-3, 516 active producer wells are located in the study area. Even if both producing wells in the Alternative 9 construction footprint were abandoned and not replaced with new wells installed outside the construction footprint, the percentage reduction in the number of natural gas wells would be very small. As a result, the employment and labor income effects associated with well abandonment, while negative, would be minimal.

NEPA Effects: Because construction of water conveyance facilities would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Construction of the proposed water conveyance facilities would increase total employment and income in the Delta region. The change would result from expenditures on construction, increasing employment, and from changes in agricultural production, decreasing employment. Changes in recreational expenditures and natural gas well operations could also affect regional employment and income, but these have not been quantified. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.16, Impacts AG-1.
and AG-2; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.16, REC-1 through REC-4; abandonment of natural gas wells is addressed in Chapter 26, *Mineral Resources*, Section 26.3.3.16, Impact MIN-1. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

**Population**

Construction of conveyance facilities would require an estimated peak of 3,210 workers in year 4 of the assumed 8-year construction period. It is anticipated that many of these new jobs would be filled from within the existing five-county labor force. Considering the multi-year duration of conveyance facility construction, it is anticipated that non-local workers would temporarily relocate to the five-county region, thus adding to the local population. As discussed in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.1, Direct Growth Inducement, an estimated 30 percent of workers could come from out of the Delta region, suggesting that approximately 1,000 workers could relocate to the Delta region at the peak of the construction period. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Changes in demand for public services resulting from any increase in population are addressed in Chapter 20, *Public Services and Utilities*, Section 20.3.3.16, Impact UT-1 through UT-6.

**Housing**

Changes in housing demand are based on changes in supply resulting from displacement during facilities construction and changes in housing demand resulting from employment associated with construction of conveyance facilities. As described in Chapter 13, *Land Use*, Section 13.3.3.16, Impact LU-2, construction of water conveyance facilities under Alternative 9 would conflict with approximately 74 residential structures. The construction workforce would most likely commute daily to the work site from within the five-county region; however, if needed, there are about 53,000 housing units available to accommodate workers who may choose to commute on a workweek basis or who may choose to temporarily relocate to the region for the duration of the construction period, including the estimated 1,000 workers who may temporarily relocate to the Delta region from out of the region. In addition to the available housing units, there are recreational vehicle parks and hotels and motels within the five-county region to accommodate any construction workers. As a result, and as discussed in more detail in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.1, Direct Growth Inducement, construction of the proposed conveyance facilities is not expected to substantially increase the demand for housing within the five-county region.
**NEPA Effects:** Within specific local communities, there could be localized effects on housing. However, given the availability of housing within the five-county region, predicting where this impact might fall would be speculative. In addition, new residents would likely be dispersed across the region, thereby not creating a burden on any one community.

Because these activities would not result in permanent concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population. Therefore, the minor increase in population is not anticipated to lead to adverse physical changes in the environment.

**Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 9, effects on community character would be similar in nature, but not location or magnitude, to those described under Alternative 1A, Impact ECON-3. Under this alternative, regional population and employment would increase to levels described above under Impact ECON-1 and ECON-2. The geographic extent of these effects would also vary from that described for Alternative 1A, as the intensity of effects would be somewhat greater or lesser based on communities' ability to accommodate growth and proximity to features constructed for the water conveyance alignment under this alternative. Under this alternative, areas adjacent to the proposed fish screens in Walnut Grove and Locke could experience the greatest changes in character. Effects associated with construction activities could also result in changes to community cohesion if they were to restrict mobility, reduce opportunities for maintaining face-to-face relationships, or disrupt the functions of community organizations or community gathering places (such as schools, libraries, places of worship, and recreational facilities). Under Alternative 9, several gathering places that lie in the vicinity of construction areas could be indirectly affected by noise and traffic associated with construction activities, including the Walnut Grove Branch Library, Walnut Grove Elementary, Walnut Grove Buddhist Church, Walnut Grove Community Church, Delta Food Bank, South County Services (formerly Galt Community Concilio), Walnut Grove Fire Department, and several marinas or other recreational facilities (see Chapter 15, *Recreation*, Table 15-16).

Like Alternative 1A, the anticipated economic shift away from agricultural and recreational activities and towards construction could result in demographic changes. In comparing the existing demographic composition of agricultural workers and construction laborers within the five-county Delta Region, men make up a large proportion of both occupations: 84 percent of agricultural workers were male, compared with 98 percent of construction laborers. Approximately 92 percent of agricultural workers made less than $35,000, while 60 percent of construction laborers made less than $35,000. Additionally, 87 percent of agricultural workers within the study area report Hispanic origin, while 54 percent of construction laborers claim Hispanic origin within the five-county area (U.S. Census Bureau 2012b).

Construction activities could be expected to bring about a decline in the rural qualities currently exhibited by Delta communities, while expansion of employment and population in the region could provide economic opportunities supportive of community stability. While water conveyance construction could result in beneficial effects relating to the economic welfare of a community, adverse social effects could also arise as a result of declining economic stability in communities closest to construction effects and in those most heavily influenced by agricultural and recreational
activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-3.

**CEQA Conclusion:** Construction of water conveyance facilities under Alternative 9 could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-2 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment. However, implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito Management Plans.

**Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 9, publicly-owned water conveyance facilities would be constructed on land of which some is currently held by private owners. Property tax and assessment revenue forgone as a result of water conveyance facilities is estimated at $5.6 million over the construction period. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the BDCP such as reclamation districts where conveyance facilities and associated work areas are proposed. This economic effect would be considered adverse; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for constructing, locating, operating, or mitigating for new Delta water conveyance facilities. Additionally, as discussed under Impact ECON-1, construction of the water conveyance facilities would be anticipated to result in a net increase of income and employment in the Delta region. This would also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Under Alternative 9, construction of water conveyance facilities would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the construction period, property tax and assessment revenue forgone is estimated at $5.6 million. However, the Sacramento-San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to
have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any
physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed
Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 9, three recreational facilities would be permanently displaced and
three others would be temporarily but directly or indirectly disturbed during construction, as
described in Chapter 15, *Recreation*, Section 15.3.3.16, Impacts REC-1 through REC-4. Construction
of Alternative 9 facilities would result in displacement and permanent loss of recreation facilities
including the Walnut Grove public guest dock, Boathouse Marina, and the Boon Dox guest dock in
Walnut Grove. Additionally, the quality of recreational activities including boating, fishing,
waterfowl hunting, and hiking in the Delta could be indirectly affected by noise, lighting, traffic, and
visual degradation in proximity to water conveyance construction. Recreation areas anticipated to
experience temporary or indirect effects include Delta Meadows State Park, Brannan Island State
Recreation Area, Sherman Island, Delta Meadows River Park, Stone Lakes National Wildlife Refuge,
Cosumnes River Preserve, Dagmar’s Landing, Deckhands Marine Supply, Landing 63, Walnut Grove
Marina, Bullfrog Landing & Marina, Union Point Marina Bar & Grill, and Clifton Court Forebay.

Construction of water conveyance structures under this alternative would be anticipated to result in
a lower-quality recreational experience in a number of localized areas throughout the Delta, despite
the implementation of mitigation measures, including enhancement of fishing access sites and
incorporation of recreational access into project design, and environmental commitments, including
providing funding to implement recreational improvements and control aquatic weeds, providing
notification of maintenance activities in waterways and developing and implementing a noise
abatement plan, as described in Appendix 3B, *Environmental Commitments*. With a loss of
recreational facilities and a decrease in recreational quality, the number of visits would be
anticipated to decline, at least in areas closest to construction activities. The multi-year schedule and
geographic scale of construction activities and the anticipated decline in recreational spending
would be considered an adverse effect. The commitments and mitigation measure cited above
would contribute to the reduction of this effect.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities under Alternative 9
would be anticipated to impact recreational revenue through the loss of recreational facilities and a
decrease in recreational quality. Fewer visits would be anticipated to result in decreased economic
activity related to recreational activities. This section considers only the economic effects of
recreational changes brought about by construction of the proposed water conveyance facilities.
Potential physical changes to the environment relating to recreational resources are described and
evaluated in Chapter 15, *Recreation*, Section 15.3.3.16, Impacts REC-1 through REC-4.

**Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of
the Proposed Water Conveyance Facilities**

Construction of conveyance facilities would convert land from existing agricultural uses to uses that
include direct facility footprints, construction staging areas, borrow/spoils areas, RTM storage,
temporary and permanent roads, and utilities. Agricultural land could also be affected by changes in
water quality and other conditions that would affect crop productivity. These direct effects on
agricultural land are described in Chapter 14, *Agricultural Resources*, Section 14.3.3.16, Impacts AG-1
and AG-2.
Changes in crop acreage were used to describe the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, Environmental Setting/Affected Environment. Table 16-57 summarizes the changes in acreage and value of agricultural production that would result in the Delta region as a result of Alternative 9 construction. Changes are shown relative to the Existing Conditions and the No Action Alternative by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The table also includes a summary of changes in crop acreages that are reported in greater detail in Appendix 14A, Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction.

Total value of irrigated crop production in the Delta would decline on average by $3.8 million per year during the construction period, with total irrigated crop acreage declining by about 2,600 acres. These estimates are not dependent on water year type.

Table 16-57. Crop Acres and Value of Agricultural Production in the Delta during Construction (Alternative 9)

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 9</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>481.0</td>
<td>-2.6</td>
</tr>
<tr>
<td>Grains</td>
<td>58.3</td>
<td>-0.3</td>
</tr>
<tr>
<td>Field crops</td>
<td>190.4</td>
<td>-0.7</td>
</tr>
<tr>
<td>Forage crops</td>
<td>111.8</td>
<td>-1.0</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>76.6</td>
<td>-0.6</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>44.0</td>
<td>-0.1</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>646.2</td>
<td>-3.8</td>
</tr>
<tr>
<td>Grains</td>
<td>24.1</td>
<td>-0.1</td>
</tr>
<tr>
<td>Field crops</td>
<td>113.4</td>
<td>-0.4</td>
</tr>
<tr>
<td>Forage crops</td>
<td>72.3</td>
<td>-0.8</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>266.2</td>
<td>-2.2</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>170.3</td>
<td>-0.3</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).

Alternative 9 may also affect production costs, investments in production facilities and standing orchards and vineyards, and salinity of agricultural water supply. Effects would be similar to those qualitatively described under Alternative 1A, Impact ECON-6. See Chapter 14, Agricultural Resources, Section 14.3.3.16, Impacts AG-1 and AG-2, for further discussion of indirect effects on agricultural resources.

**NEPA Effects:** Because construction of the proposed water conveyance facilities would lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Construction of the proposed water conveyance facilities would reduce the total value of agricultural production in the Delta region. The removal of agricultural land from...
production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.16, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

In the Delta region, ongoing operation and maintenance of BDCP facilities would result in increased expenditures relative to the Existing Conditions and the No Action Alternative (regional economic conditions do not differ across Existing Conditions and No Action Alternative). The increased expenditures are expected to result in a permanent increase in regional employment and income, including an estimated 121 direct and 177 total (direct, indirect, and induced) FTE jobs (Table 16-58). Potential changes in the value of agricultural production result in changes to regional employment and income in the Delta region under the Alternative 9 relative to the Existing Conditions and the No Action Alternative.

**Table 16-58. Regional Economic Effects on Employment and Labor Income during Operations and Maintenance (Alternative 9)**

<table>
<thead>
<tr>
<th>Regional Economic Impact&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Impacts from Operations and Maintenance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment (FTE)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>121</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>177</td>
</tr>
<tr>
<td><strong>Labor Income</strong> (million $)</td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>7.8</td>
</tr>
<tr>
<td>Total&lt;sup&gt;b&lt;/sup&gt;</td>
<td>10.5</td>
</tr>
</tbody>
</table>

Note: Labor income is reported in 2011 dollars (U.S. Department of Commerce 2012).

<sup>a</sup> IMPLAN results are changes relative to Existing Condition or No Action Alternative.

<sup>b</sup> Includes direct, indirect, and induced effects.

The operation and maintenance of conveyance and related facilities such as roads and utilities would result in the permanent removal of agricultural land from production following construction, and the effects on employment and income would be negative, including the loss of an estimated 14 agricultural and 36 total (direct, indirect, and induced) FTE jobs. The regional economic effects on employment and income in the Delta region from the change in agricultural production are reported in Table 16-59. Mapbook Figures M14-9 and M14-10 display areas of Important Farmland and lands under Williamson Act contracts that could be converted to other uses due to the construction of water conveyance facilities for the Separate Corridors/Through Delta alignment.
Table 16-59. Regional Economic Effects on Agricultural Employment and Labor Income during Operations and Maintenance (Alternative 9)

<table>
<thead>
<tr>
<th>Economic Impact</th>
<th>Impacts on Agriculture</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment (FTE)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-14</td>
</tr>
<tr>
<td>Total(^a)</td>
<td>-36</td>
</tr>
<tr>
<td><strong>Labor Income (million $)</strong></td>
<td></td>
</tr>
<tr>
<td>Direct</td>
<td>-1.0</td>
</tr>
<tr>
<td>Total(^b)</td>
<td>-1.9</td>
</tr>
</tbody>
</table>

Note: Labor income is reported in 2011 dollars (U.S. Department of Commerce 2012).
\(^a\) IMPLAN results are changes relative to Existing Condition or No Action Alternative.
\(^b\) Includes direct, indirect, and induced effects.

**NEPA Effects:** Because continued operation and maintenance of water conveyance facilities would result in an increase in operations-related employment and labor income, this would be considered a beneficial effect. However, the long-term footprint of facilities would lead to a continued decline in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would increase total employment and income in the Delta region. The change would result from expenditures on BDCP operation and maintenance, increasing employment, and from changes in agricultural production, decreasing employment. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, *Implementation Costs and Funding Sources*; removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.16, Impacts AG-3 and AG-4; changes in recreation related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.16, Impacts REC-5 through REC-8. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.

**Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**Population**

Operations and maintenance of conveyance facilities would require approximately 120 permanent new workers. Given the nature of those operation and maintenance jobs, the existing water conveyance facilities already in the five-county region, the large workforce in the region, and the
large water agencies with headquarters in that region, it is anticipated that most of these new jobs would be filled from within the existing five-county labor force. However, operation and maintenance may require specialized worker skills not readily available in the local labor pool. As a result, it is anticipated that some specialized workers may be recruited from outside the five-county region.

It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population would constitute a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. Changes in demand for public services resulting from any increase in population are addressed in Chapter 20, Public Services and Utilities, Section 20.3.3.16, Impact UT-7.

**Housing**

It is anticipated that most of the operational workforce would be drawn from within the five-county region. Consequently, operation of the conveyance facilities would not result in impacts on housing. There are about 53,000 housing units available to accommodate any nonlocal workers who relocate to the five-county region. As a result, operation and maintenance of the proposed conveyance facilities is not expected to increase the demand for housing.

**NEPA Effects:** Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population. Therefore, the minor increase in population is not anticipated to lead to adverse physical changes in the environment.

**Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Throughout the five-county Delta region, population and employment could slightly expand due to continued operation and maintenance of the water conveyance facilities under Alternative 9. Agricultural and recreational contributions to the character and culture of the Delta would be likely to experience a decline commensurate with the projected effects discussed under Impact ECON-7 and Impact ECON-11, below. This could result in the closure of businesses dependent on these industries or their employees, particularly in areas where these activities would be most affected. Those hired to operate, repair, and maintain water conveyance structures could bring new influences to Delta communities. To the extent that this anticipated economic shift away from agriculture and recreation results in demographic changes in population, employment level, income, age, gender, or race, the study area would be expected to see changes to its character, particularly in those Delta communities most substantially affected by demographic changes based on their size or proximity to BDCP facilities.

While some of the rural qualities of Delta communities, including relatively low noise and traffic levels, could return to near pre-construction conditions during the operational phase, other effects would be lasting. For instance, the visual appearance of intakes and other permanent features would compromise the predominantly undeveloped and agricultural nature of communities like Walnut Grove and Locke, which would be closest to the permanent water conveyance features under this alternative. Where operations make areas less desirable in which to live, work, shop, or participate...
in recreational activities, localized abandonment of buildings could result. Such lasting effects could also result in changes to community cohesion if they were to restrict mobility, reduce opportunities for maintaining face-to-face relationships, or disrupt the functions of community organizations or community gathering places (such as schools, libraries, places of worship, and recreational facilities).

While ongoing operations could result in beneficial effects relating to the economic welfare of a community under Alternative 9, adverse social effects could also arise, particularly in communities closest to character-changing effects and in those most heavily influenced by agricultural and recreational activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-9.

**CEQA Conclusion:** Operations and maintenance of water conveyance facilities under Alternative 9 could affect community character in the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, these impacts are described under Impact ECON-8 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

**Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 9, publicly-owned water conveyance facilities would be located, operated, and maintained on land of which some is currently held by private owners. Property tax and assessment revenue forgone as a result of water conveyance facilities is estimated at $33.7 million over the BDCP’s 50-year permit period. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the BDCP. This economic effect would be considered adverse; the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for constructing, locating, operating, or mitigating for new Delta water conveyance facilities. Additionally, as discussed under Impact ECON-7, operation and maintenance of the water conveyance facilities would be anticipated to result in a net increase of income and employment in the Delta region. This could also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Under Alternative 9, the ongoing operation and maintenance of water conveyance facilities would restrict potential property tax revenue for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated at $33.7 million. However, the Sacramento-San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the
environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternative 9, recreational activities including boat passage and navigation would be adversely affected by water conveyance operations. An environmental commitment related to boat passage facilities would reduce this effect at a majority of operable gate locations, allowing continued waterway passage while gates are closed; however, passage would be unavailable at three locations. Furthermore, even at those locations that would allow passage, boaters would now be required to wait at gates, potentially for longer than 30 minutes during peak use times. Operable gate and boat passage facilities would also require speed limits in the vicinity, which could adversely affect some recreational opportunities, including waterskiing, wakeboarding, and tubing. In some areas, boat navigation could be enhanced due to dredging activities and a new channel connection. However, use of operable gates would result in an adverse effect on recreational activities and would be anticipated to result in an adverse economic effect, at least in localized areas, by reducing the quality of the boating experience, along with other water-based recreation. An environmental commitment to retain passage at some facilities, along with implementation of Mitigation Measures REC-13a and REC-13b would reduce the severity of this effect.

**CEQA Conclusion:** Operation and maintenance activities associated with the proposed water conveyance facilities under Alternative 9 are anticipated to result in substantial localized effects on recreational resources and therefore, are expected to reduce related economic activity such as lodging, food, fuel, and accessories in these areas. This section considers only the economic effects of recreational changes brought about by construction of the proposed water conveyance facilities. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, *Recreation, Section 15.3.3.16, Impacts REC-5 through REC-8.*

**Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities**

During operation and maintenance of conveyance facilities, existing agricultural land would be within uses that include direct facility footprints and associated permanent roads and utilities. Agricultural land could also be affected by changes in water quality and other conditions that would affect crop productivity. These direct effects on agricultural land are described in Chapter 14, *Agricultural Resources, Section 14.3.3.16, Impacts AG-1 and AG-2.*

Changes in crop acreage were used to estimate the associated changes in economic values. Unit prices, yields, and crop production and investment costs were presented in Section 16.1, *Environmental Setting/Affected Environment.* Table 16-60 summarizes the changes in acreage and value of agricultural production that would result in the Delta region during operation of Alternative 9. Changes are shown relative to the Existing Conditions and the No Action Alternative by aggregate crop category (agricultural resources under Existing Conditions and in the No Action Alternative were assumed to be the same). The changes in crop acreages are reported in greater detail in Appendix 14A, *Individual Crop Effects as a Result of BDCP Water Conveyance Facility Construction.*
Total value of irrigated crop production in the Delta region would decline on average by $3.4 million per year during operation and maintenance, with total irrigated crop acreage declining by about 2,300 acres. These estimates are not dependent on water year type.

Table 16-60. Crop Acres and Value of Agricultural Production in the Delta Region during Operations and Maintenance (Alternative 9)

<table>
<thead>
<tr>
<th>Analysis Metric</th>
<th>Alternative 9</th>
<th>Change from Existing Conditions and No Action Alternative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crop Acreage (thousand acres)</td>
<td>481.4</td>
<td>-2.3</td>
</tr>
<tr>
<td>Grains</td>
<td>58.4</td>
<td>-0.2</td>
</tr>
<tr>
<td>Field crops</td>
<td>190.5</td>
<td>-0.6</td>
</tr>
<tr>
<td>Forage crops</td>
<td>111.8</td>
<td>-0.9</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>76.6</td>
<td>-0.6</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>44.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total Value of Production (million $)</td>
<td>646.6</td>
<td>-3.4</td>
</tr>
<tr>
<td>Grains</td>
<td>24.2</td>
<td>-0.1</td>
</tr>
<tr>
<td>Field crops</td>
<td>113.5</td>
<td>-0.4</td>
</tr>
<tr>
<td>Forage crops</td>
<td>72.3</td>
<td>-0.8</td>
</tr>
<tr>
<td>Vegetable, truck, and specialty crops</td>
<td>266.3</td>
<td>-2.1</td>
</tr>
<tr>
<td>Orchards and vineyards</td>
<td>170.4</td>
<td>-0.1</td>
</tr>
</tbody>
</table>

Note: Value of production is based on prices received by farmers, in 2011 dollars (U.S. Department of Commerce 2012).

Alternative 9 may also affect production costs on lands even if gross revenues are largely unaffected.

Costs could be associated with operational constraints and longer travel times due to permanent facilities. In most cases, affected lands fall within the facilities footprint, and are included in the agricultural acreage and value of production described elsewhere in this Chapter and in Chapter 14, Agricultural Resources, Section 14.3.3.16.

Crop yields and crop selection on lands in the Delta could be affected by changes in salinity of agricultural water supply during operation and maintenance activities. If operation of the proposed conveyance facilities increases salinity in part of the Delta, crops that are more sensitive to salinity could shift to other lands in the five-county Delta region. See Chapter 14, Agricultural Resources, Section 14.3.3.16, Impact AG-2, for further discussion of effects from changes in salinity.

**NEPA Effects:** The footprint of water conveyance facilities would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** During operation and maintenance of the proposed water conveyance facilities the value of agricultural production in the Delta region would be reduced. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.16, Impacts AG-1 and AG-2. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters.
throughout this EIR/EIS. When required, DWR would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical effect. Measures to reduce these impacts are discussed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, and particularly Mitigation Measure AG-1, Develop an ALSP to preserve agricultural productivity and mitigate for loss of Important Farmland and land subject to Williamson Act contracts or in Farmland Security Zones.


**NEPA Effects:** Effects on regional economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-13. In the Delta region, spending on Conservation Measures 2–22 would include construction, operation and maintenance activities that would convert or disturb existing land use. Because implementation of Conservation Measures 2–22 would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these components would also be anticipated to result in a decrease in agricultural-related employment and labor income, which would be considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site. Additionally, implementation of these components are anticipated to result in the abandonment of natural gas wells, causing a decrease in employment and labor income associated with monitoring and maintaining wells, which would be considered an adverse effect. Mitigation Measure MIN-5, described in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5, would be available to reduce these effects by minimizing, to the extent feasible, the need for well abandonment or relocation.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production activities. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impacts AG-3 and AG-4; changes in recreation-related activities are addressed in Chapter 15, *Recreation*, Section 15.3.3.2, Impacts REC-9 through REC-11; abandonment of natural gas wells is addressed in Chapter 26, *Mineral Resources*, Section 26.3.3.2, Impact MIN-5.

**Impact ECON-14: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22**

Effects on population and housing as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-14. In general, the changes in population and housing would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired.
NEPA Effects: Because these activities would not result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse effect.

CEQA Conclusion: Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes to the physical environment are not anticipated to result.

Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Effects on community character as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-15 because the measures are similar. While implementation of Conservation Measures 2–22 could result in beneficial effects relating to the economic welfare of a community, adverse social effects, including effects on community cohesion, could also arise in those communities closest to character-changing effects and those most heavily influenced by agricultural activities. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-15.

CEQA Conclusion: Implementation of Conservation Measures 2–22 under Alternative 9 could affect community character within the Delta region. However, because these impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character are related to physical impacts involving population growth, these impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to certain areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.

Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Under Alternative 9, effects on local government fiscal conditions as a result of conservation measure implementation would be similar to those described under Alternative 1A, Impact ECON-16. Conservation Measures 2–22 would remove some private land from local property tax and assessment rolls. This economic effect would be considered adverse; however, the BDCP proponents would offset forgone property tax and assessments levied by local governments and special districts on private lands converted to habitat.

CEQA Conclusion: Under Alternative 9, implementation of Conservation Measures 2–22 would result in the removal of a portion of the property tax base for various local government entities in the Delta region. Over the 50-year permit period, property tax and assessment revenue forgone is estimated to reach $176.7 million. However, the BDCP proponents would compensate local governments and special districts for forgone revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131).
Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Effects related to implementation of the Conservation Measures 2–22 under this alternative would be similar to those described under Alternative 1A, Impact ECON-17. These measures may result in adverse and beneficial effects on recreational resources in the Delta region, resulting in the potential for decreased or increased economic activities related to recreation.

CEQA Conclusion: Implementation of conservation measures would limit opportunities for recreation and compromise the quality of activities, leading to potential economic impacts. However, over time, implementation could also improve the quality of existing recreational opportunities, creating increased economic value with respect to recreation. This section considers only the economic effects of recreational changes brought about by conservation measure implementation. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Section 15.3.3.16, Impacts REC-9 through REC-11.

Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Effects on agricultural economics as a result of the proposed Conservation Measures 2–22 would be similar to those described under Alternative 1A, Impact ECON-18. Conservation Measures 2–22 would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14, Agricultural Resources, Section 14.3.3.16, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents would provide compensation to property owners for losses due to implementation of the alternative.

NEPA Effects: Because implementation of the Conservation Measures 2–22 would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce these effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.16, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of the alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1.
Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions

The socioeconomic effects associated with operation of Alternative 9 would be similar to those described under Alternative 1A, Impact ECON-19; however, the magnitude of the effects would be different based on the use of separate corridors and operations under Scenario G would lead to slightly reduced overall deliveries compared to the No Action Alternative. Changes in deliveries to hydrologic regions could result in beneficial or adverse socioeconomic effects in these areas. In hydrologic regions where water deliveries are predicted to increase when compared with the No Action Alternative, more stable agricultural activities could support employment and economic production associated with agriculture.

Changes in SWP Deliveries Compared to No Action Alternative

Compared to No Action Alternative (2060), Alternative 9 would increase deliveries to all regions except for the South Coast and Colorado River Regions, which would receive decreases in deliveries, and the San Joaquin Region, which would experience no change in deliveries. Compared to the No Action Alternative (2060), South Coast would receive the largest net decrease (up to 81 TAF of Table A plus Article 21 deliveries) among the regions, while San Francisco Bay would receive the largest increase under Alternative 9 (up to 9 TAF of Table A plus Article 21 M&I deliveries) (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-16, for more information).

Changes in CVP Deliveries Compared to No Action Alternative

Alternative 9 would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to the No Action Alternative (2060), Alternative 9 would result in increased deliveries to the other hydrologic regions with the exception of San Joaquin River, which would experience a reduction in deliveries. Compared to the No Action Alternative (2060), San Francisco Bay is projected to receive the largest net increase (less than 1 TAF) among the hydrologic regions (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-17 for more information).

NEPA Effects: Changes in deliveries to hydrologic regions could result in adverse or beneficial socioeconomic effects in these areas. Reduced or less reliable water deliveries would result in decreased agricultural production and, in turn, a reduction in both direct and indirect agricultural employment. Economic and social patterns tied to predominant agricultural industrial activities and land uses could erode, changing the character of agricultural communities in hydrologic regions. If M&I deliveries were reduced to the extent that it would, in the long run, constrain population growth in certain hydrologic regions, implementation of Alternative 9 could reinforce a socioeconomic status quo or limit potential economic and employment growth in hydrologic regions. Changes to agricultural production and population growth with its associated economic activity could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, limited growth associated with reduced deliveries could require lower expenditures for local governments while also leading to reduced revenue.

CEQA Conclusion: As described above, the operational components of BDCP Conservation Measure 1 could result in a number of effects in areas receiving SWP and CVP water deliveries outside of the Delta.
Changes in SWP Deliveries Compared to Existing Conditions

Compared to Existing Conditions, Alternative 9 would decrease deliveries to all hydrologic regions except for the San Francisco Bay Region, which would receive an increase in deliveries, and San Joaquin River Region, which would experience no change in deliveries. South Coast would receive the largest net decrease (up to 151 TAF of Table A plus Article 21 deliveries) among the regions, while San Francisco Bay would receive the only increase (up to 4 TAF) under Alternative 9 (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-16 for more information).

Changes in CVP Deliveries Compared to Existing Conditions

Alternative 9 would not change M&I deliveries for the Sacramento River, South Coast, South Lahontan, and Colorado River Regions because there are no affected CVP contractors located in these regions. Compared to Existing Conditions, Alternative 9 would result in decreased deliveries to the other hydrologic regions. Compared to Existing Conditions, San Francisco Bay is projected to receive the largest decrease (up to 7 TAF) among the hydrologic regions (refer to Chapter 30, Growth Inducement and Other Indirect Effects, Table 30-17 for more information).

Summary

Operation of water conveyance facilities under Alternative 9 could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.

16.3.4 Cumulative Analysis

16.3.4.1 Assessment Methodology

Socioeconomic effects in the Delta region are expected to change as a result of past, present, and reasonably foreseeable future projects, related to population growth and changes in economic activity in the three regions (Chapter 30, Growth Inducement and Other Indirect Effects).

When the effects of the BDCP on socioeconomic conditions are considered in connection with the potential effects of projects listed in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, the potential effects range from beneficial to potentially adverse cumulative effects on socioeconomic conditions. In addition to the projects listed in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, Table 16-61 lists the specific programs, projects, and policies for each impact category based on the potential to contribute to a BDCP impact that could be deemed cumulatively considerable. The potential for cumulative impacts on socioeconomic conditions within the Delta region is related to physical changes in the environment.

Over the long-term, Delta communities and socioeconomic conditions therein would be subject to risks associated with climate change, seismic activity, and other phenomena as discussed in Appendix 3E, Long-Term No Action Conditions.
### Table 16-61. Effects on Socioeconomics from Programs, Projects, and Policies Included in Cumulative Impact Assessment for the BDCP EIR/EIS

<table>
<thead>
<tr>
<th>Agency</th>
<th>Programs, Projects, and Policies</th>
<th>Potential Effects on Socioeconomics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Fish and Wildlife</td>
<td>California Aquatic Invasive Species Draft Rapid Response Plan</td>
<td>Beneficial effects on recreational economics</td>
</tr>
<tr>
<td>Department of Fish and Wildlife</td>
<td>Fremont Landing Conservation Bank</td>
<td>Adverse effects on agricultural economics, community character</td>
</tr>
<tr>
<td>Department of Fish and Wildlife</td>
<td>Fish Screen Project at Sherman and Twitchell Islands</td>
<td></td>
</tr>
<tr>
<td>Department of Parks and Recreation</td>
<td>Central Valley Vision</td>
<td>Beneficial effects on recreational economics, community character</td>
</tr>
<tr>
<td>Department of Water Resources</td>
<td>North Delta Flood Control and Ecosystem Restoration Project</td>
<td>Potential adverse effects related to population and housing</td>
</tr>
<tr>
<td>Department of Water Resources</td>
<td>Dutch Slough Tidal Marsh Restoration Project</td>
<td></td>
</tr>
<tr>
<td>Contra Costa Water District, Bureau of Reclamation, and Department of Water Resources</td>
<td>Los Vaqueros Reservoir Expansion Project</td>
<td>Beneficial effects on regional economics (construction-related employment and income)</td>
</tr>
<tr>
<td>Davis, Woodland, and University of California, Davis</td>
<td>Davis-Woodland Water Supply Project</td>
<td>Beneficial effects on regional economics (construction-related employment and income); potential adverse effects related to population and housing</td>
</tr>
<tr>
<td>Northeastern San Joaquin County Groundwater Banking Authority</td>
<td>Eastern San Joaquin Integrated Conjunctive Use Program</td>
<td></td>
</tr>
<tr>
<td>University of California, Davis, California Department of Water Resources, Department of Fish and Wildlife, U.S. Fish and Wildlife Service, and Bureau of Reclamation</td>
<td>Delta Smelt Permanent Refuge</td>
<td>Beneficial effects on regional economics (construction and operational employment and income)</td>
</tr>
<tr>
<td>Bureau of Reclamation</td>
<td>Delta-Mendota Canal/California Aqueduct Intertie</td>
<td>Beneficial effects on regional economics (construction-related employment and income); potential adverse effects related to population and housing</td>
</tr>
<tr>
<td>Bureau of Reclamation, U.S. Fish and Wildlife Service, National Marine Fisheries Services, Department of Water Resources, and Department of Fish and Wildlife</td>
<td>San Joaquin River Restoration Program</td>
<td>Potential beneficial effects on recreational economics and potential adverse agricultural economics</td>
</tr>
<tr>
<td>Bureau of Reclamation and San Luis &amp; Delta Mendota Water Authority</td>
<td>Grassland Bypass Project, 2010 – 2019</td>
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</tr>
<tr>
<td>Bureau of Reclamation and San Luis &amp; Delta Mendota Water Authority</td>
<td>Agricultural Drainage Selenium Management Program</td>
<td>Potential adverse effects on agricultural economics</td>
</tr>
<tr>
<td>Water Forum and U.S. Bureau of Reclamation</td>
<td>Lower American River Flow Management Standard</td>
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</tbody>
</table>
### 16.3.4.2 Cumulative Effects of the No Action Alternative

#### Regional Economics

Under the No Action Alternative, the regional economy of the Delta region is expected to be similar in structure to that described in Section 16.1, *Environmental Setting/Affected Environment*. Potential changes in expenditures related to recreation and municipal and industrial water uses as well as potential changes in the value of agricultural production could result in changes to regional employment and income in the Delta region under the No Action Alternative. The scale of the economy would change with population growth; however, the structure of the economy would not. Therefore, for the purposes of this analysis, no regional economic impact evaluation is undertaken as the economy is assumed to be similar to that characterized by the baseline five-county Delta region IMPLAN model.

#### Population and Housing

Under the No Action Alternative, it is anticipated that the population would follow the projections described in Section 16.1, *Environmental Setting/Affected Environment*. Trends in housing demand and supply would correspond to population trends. It is assumed that the growth in housing would match the growth in population, as described in Section 16.1, *Environmental Setting/Affected Environment*.
Community Character

Under the No Action Alternative, community character within the five-county Delta region would be similar to that described under Section 16.1, *Environmental Setting/Affected Environment*. Projects and programs implemented under this alternative would not be anticipated to create adverse effects on the character of Delta communities.

Local Government Fiscal Conditions

In consideration of the programs and plans adopted included in the No Action Alternative, local government fiscal conditions in Delta region would be anticipated to be similar to those conditions described under Section 16.1, *Affected Environment/Environmental Setting*. Programs resulting in public acquisition of privately-held land, in addition to the population and economic changes described above, could affect property and sales tax revenue; however, the overall effects of this alternative are not anticipated to be adverse.

Recreational Economics

Recreational economics within the five-county Delta region would be anticipated to be similar to that described under Section 16.1, *Affected Environment/Environmental Setting*. Projects to enhance and manage recreational resources, along with population growth in the Region, would be expected to increase economic activity associated with recreation in the Delta. While outside factors including changes to fisheries could alter the quality of recreational resources, based on consideration of ongoing measures to support recreation, adverse effects would not be anticipated.

Agricultural Economics in the Delta Region

Irrigated crop acreage and value of agricultural production in the Delta region under the No Action Alternative are summarized in Table 16-18. On average, $650 million in crop value would be generated on about 480 thousand irrigated acres. Field and forage crops are the two largest categories in acreage, and account for over 60% of the total irrigated acreage. Over 65% of the annual value of crop production is accounted for by two other crop categories: vegetable, truck, and specialty, and orchards and vineyards. It is possible that some of the projects, programs, and plans considered part of the No Action Alternative would reduce the total acreage and value of agricultural production in the Delta region. For example, under the 2008 and 2009 NMFS and USFWS BiOps, up to 8,000 acres of agricultural land could be converted to tidal habitat. Similarly, agricultural land uses in the Yolo Bypass or Suisun Marsh could be periodically or permanently disrupted by other habitat restoration efforts.

Because the agricultural economy of the Delta is expected to be similar in structure to that described in Section 16.1, *Environmental Setting/Affected Environment*, no quantitative impact evaluation was conducted.

Effects in South-of-Delta Hydrologic Regions

Under the No Action Alternative, several assumptions would create a deviation from Existing Conditions. First, an increase in M&I water rights demands is assumed north of the Delta, increasing overall system demands and reducing the availability of CVP water for export south of the Delta. Secondly, the No Action Alternative includes the effects of implementation of the Fall X2 standard, which requires additional water releases through the Delta and would therefore reduce the availability of water for export to SWP and CVP facilities. The No Action Alternative also includes
effects of sea level rise and climate change, factors that would also reduce the amount of water available for SWP and CVP supplies. These factors result in a decrease in deliveries under the No Action Alternative, when compared to Existing Conditions. A detailed explanation of factors influencing deliveries under the No Action Alternative is provided in Chapter 5, Water Supply, Section 5.3.3.1.

As described in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.3, overall deliveries would decrease, though SWP deliveries to the San Francisco Bay, South Coast, and Colorado River hydrologic regions would increase to meet projected increases in demand in those areas. Where there are reduced deliveries to agricultural contractors, it is reasonable to expect that agricultural production in affected areas would also decline. This decline could result from a shift to lower value crops or an increase in the acreage of land fallowed as a result of reduced deliveries or reduced reliability of deliveries. Under this scenario, it would also be anticipated that employment directly and indirectly associated with agriculture would decline in areas affected by reduced water deliveries. The location and magnitude of effects would depend largely on local factors and individual decisions. However, hydrologic regions where SWP and CVP deliveries represent a higher share of total water supply and where agriculture comprises a larger proportion of applied water use could be most susceptible to reductions in deliveries under the No Action Alternative. This includes the Tulare and San Joaquin River regions.

Increased SWP deliveries to M&I contractors in the San Francisco Bay, South Coast, and Colorado River hydrologic regions would be anticipated to meet demand associated with population growth in those regions. In other areas, M&I deliveries would generally decrease under the No Action Alternative. As discussed in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2.5, long-term water supply reliability is an important component in enabling long-term population increases. However, other factors—including natural growth, employment opportunities, local policy, and quality of life—are more likely to determine population growth. Nonetheless, population growth could stimulate economic activity resulting from increased demand for goods and services. This increased demand could create broad economic benefits for regions whose growth is supported by increased deliveries under BDCP. As with estimating changes in agricultural production, the location and extent of population growth would depend largely on local factors. Where M&I deliveries under the No Action Alternative would be reduced compared to Existing Conditions to the extent that they would, in the long run, constrain population growth, their implementation could reinforce a socioeconomic status quo or limit potential economic and employment growth in hydrologic regions. Such a result could have the largest socioeconomic effect on regions with high dependence on SWP and CVP deliveries and where urban uses represent a high share of applied water use, including the South Lahontan region and the San Francisco Bay region (in consideration of a reduction in CVP deliveries). A detailed discussion of these potential effects is found in Appendix 5B, Responses to Reduced South of Delta Water Supplies.

Changes to SWP and CVP deliveries to the hydrologic regions under the No Action Alternative could affect community character. Where agricultural deliveries decline, resultant decreases in employment and production could destabilize economic and social patterns and institutions in communities where agriculture is a predominant economic activity. Decreases in M&I deliveries as a result of the No Action Alternative, were they to constrain long-term population growth, could reinforce a socioeconomic status quo or limit potential economic and employment growth in hydrologic regions. Changes in agricultural production and population growth could also affect local government fiscal conditions. Declining employment and production linked to a reduction in agricultural water deliveries could lead to a reduction in property and sales tax revenue. Similarly,
population growth or employment growth limited by reduced M&I deliveries could result in foregone revenue. However, such growth could also require additional public sector expenditures for public services and utilities. Again, the location and intensity of these effects would depend on factors unique to local conditions and decisions, but as noted above, those regions most dependent on SWP and CVP deliveries would generally be anticipated to be most directly affected by reduced deliveries under this alternative.

Climate Change and Catastrophic Seismic Risks

Agriculture and recreation are primary economic activities in the Delta region. The potential for major seismic events, along with the potential effects of climate change, could affect ongoing agricultural and recreational uses if they resulted in the failure of levees or in climatic conditions less favorable for productive agricultural uses. Such events could also result in changes in the character of Delta communities and effects on individual homes and businesses, potentially requiring construction of new buildings. Catastrophic events resulting in levee failure could also place additional financial burdens on local governments in the Delta region. In hydrologic regions, disruptions to Delta water deliveries could alter agricultural and industrial activities, along with general effects on water supply in hydrologic regions (See Appendix 3E, Potential Seismic and Climate Change Risks to SWP/CVP Water Supplies and Appendix 5B, Responses to Reduced South of Delta Water Supplies, for more detailed discussion of seismic and climate change risks and potential responses to reduced supplies). While similar risks would occur under implementation of the action alternatives, these risks may be reduced by BDCP-related levee improvements along with those projects identified for the purposes of flood protection in Table 16-61.

Overall, the No Action Alternative would result in reduced deliveries to hydrologic regions, which could create cumulative adverse socioeconomic effects related to reduced agricultural production, employment, and the character of agricultural communities. Reductions in water deliveries could occur in areas where a large proportion of economic activity and employment is dependent on agricultural production. Reducing exports to the San Joaquin Valley and Tulare Basin would result in reduced deliveries to agricultural users and associated reduction in employment opportunities. Any reduction in water deliveries would result in an adverse effect to these affected workers’ employment and income levels. Water deliveries to southern California are made to a broad range of municipal and industrial users. To the extent that reductions in deliveries to these areas would constrain population or industrial growth, such reductions would also be expected to result in an adverse effect on employment and income. Further discussion of these potential effects is included in Chapter 28, Environmental Justice, Section 28.5.3.1, and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.4.

16.3.4.3 Cumulative Effects of the Action Alternatives

Impact ECON-1: Temporary Effects on Regional Economics and Employment in the Delta Region during Construction of the Proposed Water Conveyance Facilities

NEPA Effects: The regional economic impacts on employment and income in the Delta region attributable to Alternatives 1A through 9 (including sea level rise and climate change) are evaluated in Section 16.3.3, Effects and Mitigation Approaches. No additional changes are estimated between Existing Conditions and No Action Alternative. Therefore, the impacts of Alternatives 1A through 9 (including sea level rise and climate change) compared to No Action Alternative (with sea level rise and climate change) are the same as in Section 16.3.3.
Employment and income associated with the construction of any one of the projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, could increase employment and income in the Delta region. The projects would also potentially convert or disturb existing land use. The effects on the economy of the Delta region would be similar in kind, although not in magnitude, to those estimated for construction of conveyance features and facilities for Alternatives 1A through 9 (see analysis earlier in this chapter). In general, the changes in regional economic activity (employment and income) would include increases from the construction-related activity, declines resulting from agricultural or other land uses converted or impaired, declines resulting from abandonment of natural gas wells on lands converted or impaired, and changes in recreation spending that could be positive or negative depending on the specific project. A number of the projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, are located within the Delta, and if their construction were concurrent with that of the BDCP, the cumulative effects on employment and income would be larger than for the proposed water conveyance facilities alone. Construction of water conveyance facilities, in addition to these other projects would result in an increase in construction-related employment and labor income, this would be considered a beneficial effect. However, these activities would also be anticipated to result in a decrease in agricultural-related or natural gas-related employment and labor income, which would be considered an adverse effect. The scale of BDCP activities indicates that its effects are cumulatively considerable. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce BDCP-related effects by preserving agricultural productivity and compensating off-site. Mitigation Measure MIN-5, described in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5, would be available to reduce BDCP-related effects on natural gas wells and associated employment and labor income by minimizing, to the extent feasible, the need for well abandonment or relocation.

**CEQA Conclusion:** Construction of the BDCP water conveyance facilities and projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, would affect total employment and income in the Delta region. The potential cumulative change in total employment and income in the Delta region is based on expenditures resulting from construction and resulting changes in agricultural production, recreation, and natural gas well operations. The total cumulative change in employment and income is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Cumulative removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.4, Impacts AG-1 and AG-2; cumulative changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.4, Impacts REC-16 through REC-19; cumulative abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.17, Impact MIN-13.

**Impact ECON-2: Effects on Population and Housing in the Delta Region during Construction of the Proposed Water Conveyance Facilities**

**NEPA Effects:** The effects on population and housing in the Delta region attributable to Alternatives 1A through 9 (including sea level rise and climate change) are evaluated in Section 16.3.3, Effects and Mitigation Approaches. No additional change in impacts is estimated when comparing Alternatives 1A through 9 to No Action Alternative (with sea level rise and climate change).
Employment associated with any one of the projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, could require the temporary or permanent relocation of workers into the region. The local population could increase from the workers and their families, plus any additional employment generated by the local spending associated with the project. In turn, demand for housing could increase. The magnitude of the potential impacts would depend on the availability of workers with the required skills already living within the vicinity of the project. If insufficient labor is available locally, workers may relocate into the region, and the number doing this would depend on the scale and rate of spending on the project.

A number of projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, are located within the Delta, and if their construction were concurrent with that of conveyance or restoration actions of BDCP alternatives, the cumulative effects on population and housing during the common construction period would be larger than for the proposed water conveyance facilities alone. While the combined population and housing effects from BDCP and projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, could lead to a cumulatively significantly adverse effect, because the BDCP activities would not result in permanent concentrated, substantial increases in population or new housing, they would not be considered to be cumulatively considerable.

**CEQA Conclusion:** Construction of the BDCP water conveyance facilities and projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, would result in population increases in the Delta region. An increase in population, by itself, is not considered a physical impact under CEQA. Any physical impacts associated with the cumulative effects of the BDCP regarding population are discussed in other chapters. Changes in demand for public services resulting from any increase in population are addressed in Chapter 20, Public Services and Utilities, Section 20.3.3.2, Impact UT-1 through UT-6.

**Impact ECON-3: Changes in Community Character as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under BDCP Alternatives 1A through 9, community character could change as a result of constructing water conveyance facilities. While the location and magnitude of these effects would be anticipated to vary from alternative to alternative, the nature of these effects would be similar. Potential increases in population, along with reduced agricultural and recreational economic contributions, could create demographic changes in Delta communities, altering their character. Additionally, physical effects of construction could lead to changes in rural qualities including predominant agricultural land uses, relatively low population densities, and low levels of associated noise and vehicular traffic. Construction-related effects could also result in changes to community cohesion if they were to restrict mobility, reduce opportunities for maintaining face-to-face relationships, or disrupt the functions of community organizations or community gathering places (such as schools, libraries, places of worship, and recreational facilities).

Employment, income, and land use changes associated with the projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, could bring about changes in community character similar to those described above. The magnitude of the potential impacts would depend on the timing, location, and intensity of effects from these projects. Implementation of these projects concurrent with that of BDCP conveyance
construction would result in a cumulatively significant adverse social effect on community character during the common construction period. The incremental contribution of BDCP-related activities to this effect would be cumulatively considerable. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce cumulative adverse effects (see Appendix 3B, Environmental Commitments). These actions are summarized under Alternative 1A, Impact ECON-3.

**CEQA Conclusion:** Construction of the BDCP water conveyance facilities and projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, could affect the character in Delta communities. To the extent that project construction schedules and locations overlap, the cumulative impacts on housing and population within specific communities could be substantial in intensity. However, because these cumulative impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-2 and in Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment. However, implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation, would reduce the extent of these effects (see Appendix 3B, Environmental Commitments). Specifically, these commitments include Develop and Implement Erosion and Sediment Control Plans, Develop and Implement Hazardous Materials Management Plans, Notification of Construction and Maintenance Activities in Waterways, Noise Abatement Plan, Fire Prevention and Control Plan, and Prepare and Implement Mosquito Management Plans.

**Impact ECON-4: Changes in Local Government Fiscal Conditions as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under BDCP Alternatives 1A through 9, publicly-owned water conveyance facilities would be constructed on land of which some is currently held by private owners. Over the construction period, local governments and special districts would not be able to collect property tax and assessment revenue on this land. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the project.

Land use changes associated with the projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, could bring about changes similar to those described above. Those projects involving public acquisition of land would be anticipated to add to the adverse effects associated with BDCP, resulting in a cumulatively significant adverse effect. Other projects involving private development could also create beneficial effects with respect to local government and special district revenue. The magnitude of the potential effects from these projects would depend on the amount of land affected and the nature of the conversion.

These cumulative economic effects would be considered adverse. Due to the extent of land required for construction and long-term placement of water conveyance facilities, BDCP’s contribution to this cumulative economic effect would be deemed cumulatively considerable; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax
or assessment revenue for land used for constructing, locating, operating, or mitigating for new BDCP water conveyance facilities. Additionally, as discussed under Impact ECON-1 for each alternative, construction of the water conveyance facilities would be anticipated to result in a net increase of income and employment in the Delta region. This would also create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes.

**CEQA Conclusion:** Construction of the BDCP water conveyance facilities and projects described in Appendix 3D, *Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions*, would result in the removal of a portion of the property tax base for various local government entities in the Delta region. To the extent that these projects collectively remove land from individual entities’ tax rolls, the cumulative fiscal impacts could be substantial in intensity. However, the Sacramento–San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the construction of new conveyance facilities (Water Code Section 85089). Additionally, any losses could be offset, at least in part, by an anticipated increase in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.

**Impact ECON-5: Effects on Recreational Economics as a Result of Constructing the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under Alternatives 1A through 9, substantial disruption of recreational activities considered temporary and permanent would occur in specific areas during the construction period, as described and defined in Chapter 15, *Recreation*, Section 15.3.4, Impacts REC-16 through REC-19. The quality of recreational activities including boating, fishing, waterfowl hunting, and hiking in the Delta could be affected by noise, lighting, traffic, and visual degradation in proximity to water conveyance construction. Additionally, under Alternative 9, several recreational facilities would be permanently displaced and others would be temporarily disturbed during construction. A substantial decline in visits to the Delta region as a result of facility construction would be expected to reduce recreation-related spending, creating an adverse effect throughout the Delta. Additionally, if construction activities shift the relative popularity of different recreational sites, the project may carry localized beneficial or adverse effects.

Changes to recreational opportunities or quality associated with construction of the projects described in Appendix 3D, *Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions*, could bring about changes similar to those described above. Those projects involving in-water construction in recreational areas would be anticipated to add to the adverse effects associated with the BDCP; however, other projects involving the development or improvement of recreational opportunities could create beneficial effects with respect to recreational economic activity.

Under the BDCP alternatives, mitigation measures and environmental commitments would be implemented to reduce some of the effects of construction activities upon the recreational experience. These include protection of waterway navigation, recreational access, public views, and noise abatement, as described in Chapter 15, *Recreation*, Chapter 17, *Aesthetics and Visual Resources*, Chapter 19, *Transportation*, and Appendix 3B, *Environmental Commitments*. 
Construction of water conveyance structures, in conjunction with construction activities for other
projects, would be anticipated to result in a lower-quality recreational experience in a number of
localized areas throughout the Delta, despite the implementation of environmental commitments.
With a decrease in recreational quality, the number of visits would be anticipated to decline, at least
in areas closest to construction activities. Fewer visits would lead to less spending, creating a
cumulatively significant adverse effect. While visitors can adjust their recreational patterns to avoid
areas substantially affected by construction activities (by boating or fishing elsewhere in the Delta,
for instance), recreation-dependent businesses including marinas and recreational supply retailers
may not be able to economically weather the effects of multiyear construction activities and may be
forced to close as a result, even while businesses in areas that become more popular could benefit.
The multi-year schedule and geographic scale of BDCP construction activities and the anticipated
incremental decline in recreational spending would be cumulatively considerable. The
environmental commitments cited above would contribute to the reduction of this effect and long-
term benefits that may improve some recreation access and resources.

**CEQA Conclusion:** Construction of the BDCP water conveyance facilities and projects described in
Appendix 3D, *Defining Existing Conditions, No Action Alternative, No Project Alternative, and
Cumulative Impact Conditions*, could impact recreational revenue in the Delta region if construction
activities result in fewer visits to the area. Fewer visits would be anticipated to result in decreased
economic activity related to recreational activities. This section considers only the economic effects
of recreational changes brought about by construction of the proposed water conveyance facilities.
Potential physical changes to the environment relating to cumulative recreational resources are
described and evaluated in Chapter 15, *Recreation*, Section 15.3.4, Impacts REC-16 through REC-19.

**Impact ECON-6: Effects on Agricultural Economics in the Delta Region during Construction of
the Proposed Water Conveyance Facilities**

The agricultural economics impact in the Delta region attributable to Alternatives 1A through 9
(including sea level rise and climate change) is evaluated in Section 16.3.3, *Effects and Mitigation
Approaches*. No additional changes in impacts are estimated when comparing Alternatives 1A
through 9 to No Action Alternative (with sea level rise and climate change).

Projects described in Appendix 3D, *Defining Existing Conditions, No Action Alternative, No Project
Alternative, and Cumulative Impact Conditions*, could lead to the conversion or impairment of
existing land uses, resulting in loss of existing economic activity, jobs, and tax revenues. This would
occur due to temporary or permanent footprints of facilities such as pipelines, canals, levees, or
habitat restoration. Projects that would convert existing Delta land uses could impose a cumulative
impact on the Delta region. The nature of such impacts is discussed in the Cumulative Analysis

**NEPA Effects:** Because construction of the proposed water conveyance facilities, in addition to the
other projects, programs, and plans considered, would lead to reductions in crop acreage and in the
value of agricultural production in the Delta region, this is considered an adverse effect and the
incremental contribution of BDCP-related activities would be cumulatively considerable. Mitigation
Measure AG-1, described in Chapter 14, *Agricultural Resources*, Section 14.3.3.2, Impact AG-1, would
be available to reduce BDCP-related effects by preserving agricultural productivity and
compensating off-site.

**CEQA Conclusion:** Construction of the BDCP water conveyance facilities and projects described in
Appendix 3D, *Defining Existing Conditions, No Action Alternative, No Project Alternative, and
Cumulative Impact Conditions, could reduce the total value of agricultural production in the Delta region. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. The potential cumulative impacts from permanent removal of agricultural land from production are addressed in Chapter 14, Agricultural Resources, Section 14.3.4, Impacts AG-1 and AG-2.

Impact ECON-7: Permanent Regional Economic and Employment Effects in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

Cumulative effects on regional economics during operation and maintenance of the BDCP and projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, would be similar in kind, although not magnitude, to those described under Section 16.3.4, Cumulative Analysis, Impact ECON-1.

NEPA Effects: Increased expenditures related to operation and maintenance of water conveyance facilities would be expected to result in a permanent increase in regional employment and income, as presented in Table 16-22. This would be considered a beneficial effect. However, the permanent removal of agricultural land following construction would have lasting negative effects on agricultural employment and income, as shown in Table 16-23. Considered together, the cumulative effects of these projects on agricultural employment would be adverse and the effect of BDCP activities would be cumulatively considerable. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce BDCP-related effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Operation and maintenance of the proposed water conveyance facilities would increase total employment and income in the Delta region. The net change would result from expenditures on operation and maintenance and from changes in agricultural production, which could also be affected by other projects, programs, and plans in the Delta region. The total change in income and employment is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Costs are addressed in Chapter 8 of the BDCP, Implementation Costs and Funding Sources; removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.4, Impacts AG-1 and AG-2; changes in recreation related activities are addressed in Chapter 15, Recreation, Section 15.3.4, Impacts REC-20 and REC-21.

Impact ECON-8: Permanent Effects on Population and Housing in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Cumulative effects on population and housing during operation and maintenance of the BDCP and projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, would be similar in kind, although not magnitude, to those described under Section 16.3.4, Cumulative Analysis, Impact ECON-2. It is anticipated that non-local workers would relocate to the five-county region, thus adding to the local population. However, this additional population and any population added by other projects in the Delta region would be anticipated to result in only a minor increase in the total 2020 projected regional population of 4.6 million and be distributed throughout the region. It is anticipated that most of the operational workforce would be drawn from within the five-county region.
Consequently, operation of the conveyance facilities, in addition to the effects of other projects, would not result in cumulative adverse effects on housing.

**CEQA Conclusion:** Operation and maintenance of the proposed water conveyance facilities, in addition to other programs, plans, policies, and projects in the Delta region, would result in minor population increases in the Delta region with adequate housing supply to accommodate the change in population and therefore adverse changes in the physical environment are not anticipated.

**Impact ECON-9: Changes in Community Character during Operation and Maintenance of the Proposed Water Conveyance Facilities**

**NEPA Effects:** Under BDCP Alternatives 1A through 9, community character could change during the continued operation and maintenance of water conveyance facilities. While the location and magnitude of these effects would be anticipated to vary from alternative to alternative, the nature of these effects would be similar. Changes in population, along with reduced agricultural and recreational economic contributions, could create demographic changes in Delta communities, altering their character. Additionally, continued physical effects of operations could lead to changes in rural qualities including predominant agricultural land uses, relatively low population densities, and low levels of associated noise and vehicular traffic. Such lasting effects could also result in changes to community cohesion if they were to restrict mobility, reduce opportunities for maintaining face-to-face relationships, or disrupt the functions of community organizations or community gathering places (such as schools, libraries, places of worship, and recreational facilities).

Employment, income, and land use changes associated with the projects described in Appendix 3D, *Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions*, could bring about changes in community character similar to those described above. The magnitude of the potential impacts would depend on the location and intensity of effects from these projects. However, the resultant cumulative social effects on community character would be significant and adverse. The incremental contribution of BDCP-related activities to this effect would be cumulatively considerable. Implementation of mitigation measures and environmental commitments related to noise, visual effects, transportation, agriculture, and recreation would reduce cumulative adverse effects (see Appendix 3B, *Environmental Commitments*). These actions are summarized under Alternative 1A, Impact ECON-9.

**CEQA Conclusion:** Continued operation and maintenance of BDCP water conveyance features, along with projects described in Appendix 3D, *Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions*, could affect the character in Delta communities. To the extent that project locations overlap, the cumulative impacts on housing and population within specific communities could be substantial in intensity. However, because these cumulative impacts are social in nature, rather than physical, they are not considered impacts under CEQA. To the extent that changes to community character would lead to physical impacts involving population growth, such impacts are described under Impact ECON-8 and in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific areas, sectors, or the vacancy of individual buildings, could result in alteration of community character stemming from a lack of maintenance, upkeep, and general investment.
Impact ECON-10: Changes in Local Government Fiscal Conditions during Operation and Maintenance of the Proposed Water Conveyance Facilities

NEPA Effects: Under BDCP Alternatives 1A through 9, publicly-owned water conveyance facilities would be located, operated, and maintained on land of which some is currently held by private owners. Over the 50-year permit period, local governments and special districts would not be able to collect property tax and assessment revenue on this land. These decreases in revenue could potentially result in the loss of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the project.

Land use changes associated with the projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, could bring about changes similar to those described above. Those projects involving public acquisition of land would be anticipated to add to the adverse effects associated with the BDCP resulting in a cumulatively significant adverse effect. Other projects involving private development could create beneficial effects with respect to local government and special district revenue. The magnitude of the potential effects from these projects would depend on the amount of land affected and the nature of the conversion.

These cumulative economic effects would be considered adverse. Due to the extent of land required for construction and long-term placement of water conveyance facilities, BDCP’s contribution to this cumulative economic effect would be deemed cumulatively considerable; however, the BDCP proponents would make arrangements to compensate local governments for the loss of property tax or assessment revenue for land used for constructing, locating, operating, or mitigating for new BDCP water conveyance facilities. Additionally, as discussed under Impact ECON-7 for Alternatives 1A, 1C, 2A, 2C, 3, 4, 5, 6A, 6C, 7, 8, and 9 above, construction of the water conveyance facilities would be anticipated to result in a net increase of income and employment in the Delta region. This may create an indirect beneficial effect through increased sales tax revenue for local government entities that rely on sales taxes. However, under Alternatives 1B, 2B, and 6B, decreased income and employment could create additional strains on the finances of local government entities.

CEQA Conclusion: Continued operation and maintenance of the BDCP water conveyance facilities and projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, would restrict potential property tax and assessment revenue for various local government entities in the Delta region. To the extent that these projects collectively remove land from individual entities’ tax rolls, the cumulative fiscal impacts could be substantial in intensity. However, the Sacramento–San Joaquin Delta Reform Act commits the entities receiving water from the State Water Project and federal Central Valley Project to mitigate for lost property tax and assessment revenue associated with land needed for the continued operation and maintenance of new conveyance facilities (Water Code Section 85089). Additionally, under some BDCP alternatives, some losses may be mitigated by increases in sales tax revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in reasonably foreseeable physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131). Here, any physical consequences resulting from fiscal impacts are too speculative to ascertain.
Impact ECON-11: Effects on Recreational Economics during Operation and Maintenance of the Proposed Water Conveyance Facilities

Alternatives 1A through 8

Under Alternatives 1A through 8, water conveyance structures are expected to permanently displace some recreational access along the alternative alignments. These impacts are discussed in Chapter 15, Recreation, Sections 15.3.3.2 through 15.3.3.15.

Maintenance of conveyance facilities, including intakes, would result in periodic temporary but not substantial adverse effects on boat passage and water-based recreational activities. Similarly, recreational changes associated with operation and maintenance of the projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, would not be anticipated to create adverse economic effects related to recreation.

NEPA Effects: Because effects of facility maintenance would be short-term and intermittent, substantial cumulative economic effects are not anticipated to result.

Alternative 9

Recreational changes associated with operation and maintenance of the projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, would not be anticipated to create adverse economic effects related to recreation. However, under BDCP Alternative 9, recreational activities including boat passage and navigation would be adversely affected by water conveyance operations. Operable gate and boat passage facilities would require boaters to wait for passage and would require speed limits in nearby areas. In some areas, boat navigation could be enhanced due to dredging activities and a new channel connection. However, use of operable gates would result in an adverse effect on recreational activities and would be anticipated to result in a cumulative adverse economic effect, at least in localized areas, by reducing the quality of the boating experience, along with other water-based recreation.

NEPA Effects: The incremental effect of operating BDCP Alternative 9 would be cumulatively considerable. An environmental commitment to retain passage at some facilities, along with implementation of Mitigation Measures REC-13a and REC-13b would reduce the severity of this effect.

CEQA Conclusion: Recreational changes associated with operation and maintenance of the projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, would not be anticipated to create adverse economic effects related to recreation. Similarly, operation and maintenance activities associated with the proposed water conveyance facilities under Alternatives 1A through 8 would only be anticipated to create minor effects on recreational spending. However, operation of Alternative 9 would be anticipated to result in substantial effects on recreational resources and therefore, to reduce related economic activity such as lodging, food, fuel, and accessories. This section considers only the economic effects of recreational changes. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Sections 15.3.3.2 through 15.3.3.15 and Section 15.3.4, Impacts REC-20 and REC-21.
Impact ECON-12: Permanent Effects on Agricultural Economics in the Delta Region during Operation and Maintenance of the Proposed Water Conveyance Facilities

Cumulative effects on agricultural economics during operation and maintenance of the BDCP Alternatives 1A through 9 and projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, would be similar in kind, although not magnitude, to those described under Section 16.3.4, Cumulative Analysis, Impact ECON-6.

NEPA Effects: Together, the footprint of water conveyance facilities proposed under BDCP, along with other projects, programs, and plans, would result in lasting reductions in crop acreage and in the value of agricultural production in the Delta region; therefore, this is considered an adverse cumulative effect and the incremental BDCP contribution to this effect would be cumulatively considerable. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce BDCP-related effects by preserving agricultural productivity and compensating off-site.

CEQA Conclusion: Operation and maintenance of the BDCP and projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, could reduce the total value of agricultural production in the Delta region. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. The potential cumulative impacts from permanent removal of agricultural land from production are addressed in Chapter 14, Agricultural Resources, Section 14.3.4, Impacts AG-1 and AG-2.

Implementation of the Proposed Conservation Measures 2–22

NEPA Effects: Cumulative effects on regional economics as a result of implementing Conservation Measures 2–22 related to the BDCP and projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, would be similar in kind, although not magnitude, to those described under Section 16.3.4, Cumulative Analysis, Impact ECON-1. In the Delta region, spending on Conservation Measures 2–22 associated with BDCP Alternatives 1A through 9 and other similar projects would include construction, operation and maintenance activities that would convert or disturb existing land use. Because implementation of Conservation Measures 2–22, along with effects of similar projects, would be anticipated to result in an increase in construction and operation and maintenance-related employment and labor income, this would be considered a beneficial effect. However, implementation of these BDCP components and other non-BDCP projects would also be anticipated to result in a decrease in agricultural-related and natural gas production-related employment and labor income, which would be considered an adverse cumulative effect and the incremental BDCP contribution to this effect would be cumulatively considerable. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce BDCP-related effects by preserving agricultural productivity and compensating off-site. Mitigation Measure MIN-5, described in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5, would be available to reduce BDCP-related effects on natural gas well-related employment and labor income by minimizing, to the extent feasible, the need for well abandonment or relocation.
**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would affect total employment and income in the Delta region. The change in total employment and income in the Delta region is based on expenditures resulting from implementation of the proposed Conservation Measures 2–22 and any resulting changes in agricultural production, recreation, and natural gas production activities. The total change in employment and income is not, in itself, considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. Removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impacts AG-3 and AG-4; changes in recreation-related activities are addressed in Chapter 15, Recreation, Section 15.3.3.2, Impacts REC-9 through REC-11; abandonment of natural gas wells is addressed in Chapter 26, Mineral Resources, Section 26.3.3.2, Impact MIN-5.

**Impact ECON-14: Effects on Population and Housing in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22**

Cumulative effects on population and housing as a result of implementing Conservation Measures 2–22 related to the BDCP and projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, would be similar in kind, although not magnitude, to those described under Section 16.3.4, Cumulative Analysis, Impact ECON-2. In general, the changes in population and housing associated with BDCP Alternatives 1A through 9, as well as similar conservation efforts in the Delta region, would include increases in population from the construction and operation and maintenance-related activity and declines in residential housing and business establishments as a result of lands converted or impaired.

**NEPA Effects:** Because these activities would not be anticipated to result in concentrated, substantial increases in population or new housing, they would not be considered to have an adverse cumulative effect.

**CEQA Conclusion:** Implementation of the proposed Conservation Measures 2–22 would impact total population and housing in the Delta region. The change in total population and housing in the Delta region is based on employment resulting from implementation of the proposed Conservation Measures 2–22. The change in population and housing is expected to be minor relative to the five-county Delta region, and dispersed throughout the region. Therefore, significant changes to the physical environment are not anticipated to result.

**Impact ECON-15: Changes in Community Character as a Result of Implementing the Proposed Conservation Measures 2–22**

**NEPA Effects:** Cumulative effects on community character as a result of implementing Conservation Measures 2–22 related to the BDCP and projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, would be similar in kind, although not magnitude, to those described above under Impacts ECON-3 and ECON-9. Changes in population and in agricultural and recreational economic contributions could create demographic changes in Delta communities, altering their character and resulting in potential effects on community cohesion. Additionally, physical effects of conservation measure implementation could improve or detract from the rural qualities of Delta communities.

Employment, income, and land use changes associated with the projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, could bring about changes in community character similar to those described above. The
magnitude of the potential impacts would depend on the location and intensity of effects from these
projects. However, the resulting cumulative social effects on community character would be
anticipated to be significant and adverse. The incremental contribution of BDCP-related activities to
this effect would be cumulatively considerable. Implementation of mitigation measures and
environmental commitments related to noise, visual effects, transportation, agriculture, and
recreation would reduce cumulative adverse effects (see Appendix 3B, Environmental
Commitments). These actions are summarized under Alternative 1A, Impact ECON-15.

CEQA Conclusion: Implementation of BDCP Conservation Measures 2–22, along with projects
described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative,
and Cumulative Impact Conditions, could affect the character in Delta communities. To the extent
that project locations overlap, the cumulative impacts on housing and population within specific
communities could be substantial in intensity. However, because these cumulative impacts are
social in nature, rather than physical, they are not considered impacts under CEQA. To the extent
that changes to community character would lead to physical impacts involving population growth,
such impacts are described in Chapter 30, Growth Inducement and Other Indirect Effects, Section
30.3.2. Furthermore, notable decreases in population or employment, even if limited to specific
areas, sectors, or the vacancy of individual buildings, could result in alteration of community
character stemming from a lack of maintenance, upkeep, and general investment.

Impact ECON-16: Changes in Local Government Fiscal Conditions as a Result of Implementing
the Proposed Conservation Measures 2–22

NEPA Effects: Cumulative effects on community character as a result of implementing Conservation
Measures 2–22 related to the BDCP and projects described in Appendix 3D, Defining Existing
Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, would be
similar in kind, although not magnitude, to those described above under Impacts ECON-4 and ECON-10. Under BDCP Alternatives 1A through 9, implementation of Conservation Measures 2–22
including CM3, CM4, CM5, and CM10 would take place on at least some land currently held by
private owners. Local governments and special districts would not be able to collect property tax
and assessment revenue on this land. These decreases in revenue could potentially result in the loss
of a substantial share of some agencies’ tax bases, particularly for smaller districts affected by the
project.

Land use changes associated with the projects described in Appendix 3D, Defining Existing
Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, could
bring about changes similar to those described above. Those projects involving public acquisition of
land would be anticipated to add to the adverse effects associated with the BDCP resulting in a
cumulatively significant adverse effect. Other projects involving private development could create
beneficial effects with respect to local government and special district revenue. The magnitude of
the potential effects from these projects would depend on the amount of land affected and the
nature of the conversion. These cumulative economic effects would be considered adverse. Due to
the extent of land required for construction and long-term placement of water conveyance facilities,
BDCP’s contribution to this cumulative economic effect would be deemed cumulatively
considerable; however, the BDCP proponents would offset forgone property tax and assessments
levied by local governments and special districts on private lands converted to habitat.

CEQA Conclusion: Implementation of BDCP Conservation Measures 2–22, along with projects
described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative,
and Cumulative Impact Conditions, would restrict potential property tax and assessment revenue for various local government entities in the Delta region. To the extent that these projects collectively remove land from individual entities’ tax rolls, the cumulative fiscal impacts could be substantial in intensity. However, the BDCP proponents would compensate local governments and special districts for forgone revenue. CEQA does not require a discussion of socioeconomic effects except where they would result in physical changes. If an alternative is not anticipated to result in a physical change to the environment, it would not be considered to have a significant impact under CEQA (CEQA Guidelines Sections 15064(f) and 15131).

Impact ECON-17: Effects on Recreational Economics as a Result of Implementing the Proposed Conservation Measures 2–22

NEPA Effects: Implementation of Conservation Measures 2–22 under BDCP Alternatives 1A through 9 would be anticipated to create an adverse effect on recreational resources by limiting access to facilities, restricting boat navigation and disturbing fish habitat while restoration activities are taking place. These measures may also permanently reduce the extent of upland recreation sites. However, over the 50-year permit period, these components could also create beneficial effects by enhancing aquatic habitat and fish abundance, expanding the extent of navigable waterways available to boaters, and improving the quality of existing upland recreation opportunities. Similar adverse or beneficial effects could also result from the projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions. Therefore, the potential exists for the creation of significant cumulative adverse and beneficial effects related to recreational economics. In the case that significant adverse economic effects arise, the BDCP's incremental contribution could be cumulatively considerable.

CEQA Conclusion: Site preparation and earthwork activities associated with the BDCP and non-BDCP conservation and habitat restoration projects would limit opportunities for recreational activities where they are conducted in or near existing recreational areas. Noise, odors, and visual effects of construction activities would also temporarily compromise the quality of recreation in and around these areas, leading to potential economic impacts. However, over time, implementation of these projects could collectively improve the quality of existing recreational opportunities, leading to increased economic activity. This section considers only the economic effects of recreational changes brought about by conservation measure implementation. Potential physical changes to the environment relating to recreational resources are described and evaluated in Chapter 15, Recreation, Sections 15.3.3.2 through 5.3.3.16, Impacts REC-9 through REC-11.

Impact ECON-18: Effects on Agricultural Economics in the Delta Region as a Result of Implementing the Proposed Conservation Measures 2–22

Cumulative effects on agricultural economics as a result of implementing Conservation Measures 2–22 related to the BDCP and projects described in Appendix 3D, Defining Existing Conditions, No Action Alternative, No Project Alternative, and Cumulative Impact Conditions, would be similar in kind, although not magnitude, to those described under Section 16.3.4, Cumulative Analysis, Impact ECON-6. Conservation Measures 2–22 associated with BDCP alternatives 1A through 9, along with other conservation efforts in the Delta region, would convert land from existing agricultural uses. These direct effects on agricultural land are described qualitatively in Chapter 14, Agricultural Resources, Section 14.3.4, Impacts AG-3 and AG-4. Effects on agricultural economics would include effects on crop production and agricultural investments resulting from restoration actions on agricultural lands. The effects would be similar in kind to those described for lands converted due to
construction and operation of the conveyance features and facilities. The total acreage and crop mix of agricultural land potentially affected is not specified at this time, but when required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of a BDCP action alternative.

**NEPA Effects:** Because implementation of Conservation Measures 2–22, along with similar activities not associated with BDCP, would be anticipated to lead to reductions in crop acreage and in the value of agricultural production in the Delta region, this is considered an adverse cumulative effect. Mitigation Measure AG-1, described in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1, would be available to reduce BDCP-related effects by preserving agricultural productivity and compensating off-site.

**CEQA Conclusion:** Implementation of Conservation Measures 2–22 would reduce the total value of agricultural production in the Delta region. The permanent removal of agricultural land from production is addressed in Chapter 14, Agricultural Resources, Section 14.3.4, Impacts AG-3 and AG-4. The reduction in the value of agricultural production is not considered an environmental impact. Significant environmental impacts would only result if the changes in regional economics cause physical impacts. Such effects are discussed in other chapters throughout this EIR/EIS. When required, the BDCP proponents would provide compensation to property owners for economic losses due to implementation of a BDCP action alternative. While the compensation to property owners would reduce the severity of economic effects related to the loss of agricultural land, it would not constitute mitigation for any related physical impact. Measures to reduce these impacts are discussed in Chapter 14, Agricultural Resources, Section 14.3.3.2, Impact AG-1.

**Impact ECON-19: Socioeconomic Effects in the South-of-Delta Hydrologic Regions**

**Alternatives 1A through 5**

**NEPA Effects:** The cumulative socioeconomic effects associated with the implementation of the projects, programs, and policies summarized in Table 16-61, along with operation of Alternatives 1A, 1B, 1C, 2A, 2B, 2C, 3, 4, and 5 could result in adverse and beneficial effects on socioeconomics in the hydrologic regions. Programs and policies that would present barriers to continued growth could limit the potential for economic and employment growth while those that would reduce water deliveries or increase regulatory burdens for agricultural operations could result in decreased production and a decline in related employment. Generally, changes in deliveries to hydrologic regions, whether created by BDCP-related activities or other projects, programs, or policies could result in beneficial and adverse socioeconomic effects in communities throughout the hydrologic regions. These BDCP alternatives would be anticipated to generally contribute to an increase in total SWP and CVP deliveries. In hydrologic regions where water deliveries are predicted to increase when compared with the No Action Alternative, more stable agricultural activities could support employment and economic production associated with agriculture. Such changes to agricultural production and population growth with its associated economic activity could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, growth associated with deliveries could require additional expenditures for local governments while also supporting increases in revenue. Please refer to Chapter 30, Growth Inducement and Other Indirect Effects, Section 30.3.2, for additional discussion.

**CEQA Conclusion:** Operation of water conveyance facilities under Alternatives 1A through 5, along with socioeconomic effects from other projects, programs, and policies, could affect socioeconomic
conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these cumulative impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.

**Alternatives 6A through 9**

**NEPA Effects:** The cumulative socioeconomic effects associated with the implementation of the projects, programs, and policies summarized in Table 16-61, along with operation of Alternatives 6A, 6B, 6C, 7, 8, and 9 could result in adverse and beneficial effects on socioeconomics in the hydrologic regions. Programs and policies that would present barriers to continued growth could limit the potential for economic and employment growth while those that would reduce water deliveries or increase regulatory burdens for agricultural operations could result in decreased production and a decline in related employment. Generally, changes in deliveries to hydrologic regions, whether created by BDCP-related activities or other projects, programs, or policies could result in beneficial or adverse socioeconomic effects in communities throughout the hydrologic regions. These BDCP alternatives would generally be anticipated to contribute to a decrease in total SWP and CVP deliveries. Reduced or less reliable water deliveries would result in decreased agricultural production and, in turn, a reduction in both direct and indirect agricultural employment. Economic and social patterns tied to predominant agricultural industrial activities and land uses could erode, changing the character of agricultural communities in hydrologic regions. If M&I deliveries were reduced to the extent that it would, in the long run, constrain population growth in certain hydrologic regions, implementation of these BDCP alternatives, along with other projects, programs, and policies, could reinforce a socioeconomic status quo or limit potential economic and employment growth in hydrologic regions. Changes to agricultural production and population growth with its associated economic activity could also lead to shifts in the character of communities in the hydrologic regions with resultant beneficial or adverse effects. Likewise, limited growth associated with reduced deliveries could require lower expenditures for local governments while also leading to reduced revenue.

**CEQA Conclusion:** Operation of water conveyance facilities under Alternatives 6A through 9, along with socioeconomic effects from other projects, programs, and policies, could affect socioeconomic conditions in the hydrologic regions receiving water from the SWP and CVP. However, because these cumulative impacts are social and economic in nature, rather than physical, they are not considered environmental impacts under CEQA. To the extent that changes in socioeconomic conditions in the hydrologic regions would lead to physical impacts, such impacts are described in Chapter 30, *Growth Inducement and Other Indirect Effects*, Section 30.3.2.
16.4 References

16.4.1 Printed References


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