6.0 Other CEQA-Required Sections and Additional Material

This chapter discusses several topics that must be addressed in an EIR prepared in conformance with CEQA:

- Growth-inducing impacts (CEQA Guidelines, Section 15126.2(d))
- Significant irreversible environmental changes (CEQA Guidelines, Section 15126.2(c))
- Significant and unavoidable impacts (CEQA Guidelines, Section 15126.2(b))
- Impacts of mitigation measures (CEQA Guidelines, Section 15126.4(a)(1)(D))

This chapter also includes discussions of the following two additional topics:

- Environmental justice (included in accordance with California Natural Resources Agency (CNRA) policy)
- Effects of global climate change on program facilities and operations (included in accordance with DWR guidance)

6.1 Growth-Inducing Impacts

According to the CEQA Guidelines (Title 14, Section 15126.2(d) of the California Code of Regulations), an EIR must discuss the growth-inducing impacts of a project. A growth-inducing impact is one that could lead to economic or population growth or encourage development or other activities that could result in physical impacts on the environment. Specifically, CEQA states that the EIR shall:

> *[d]iscuss the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects that would remove obstacles to population growth (a major expansion of a wastewater treatment plant might, for example, allow for more construction in*

> *service areas). Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also, discuss the characteristics of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.*

Direct growth inducement would result if a project were to involve construction of new housing. Indirect growth inducement would result, for instance, if implementing a project were to cause any of the following:

- Substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises)

- A construction effort with substantial short-term employment opportunities that would indirectly stimulate the need for additional housing and services to support the new temporary employment demand

- Removal of an obstacle to additional growth and development, such as removing a constraint on a required public utility or service (e.g., construction of a major sewer line with excess capacity through an undeveloped area) or adding development adjacent to undeveloped land

Growth inducement is not an environmental effect in itself, but it may foreseeably lead to environmental effects. These effects may include increased demand on other community and public services and infrastructure, increased traffic and noise, degradation of air or water quality, degradation or loss of plant or animal habitats, or conversion of agricultural and open-space land to urban uses.

Because the proposed program would not involve construction of housing, it would not be directly growth inducing. Various potential mechanisms for indirect growth inducement generated by the proposed program are evaluated below.

6.1.1 Employment Generation

A project that would generate substantial new permanent employment could indirectly generate growth by creating demand for homes and services and fostering economic and population growth. Similarly, a construction effort with substantial short-term employment opportunities could indirectly stimulate the need for additional housing and services to support the new temporary employment demand.

Construction activities associated with the proposed program would generate short-term employment, and operation and maintenance of the proposed program could result in a minimal increase in new jobs. However, both the construction jobs and the operations and maintenance jobs would likely be filled using the existing local employment pools near each project site. Thus, the proposed program would result in little to no change in population growth in the study area as a whole or in any particular region or local employment pools. (See Section 3.16, "Population, Employment, and Housing," for additional information about the program's potential employment and population effects.) Therefore, implementing the proposed program would not indirectly induce growth or result in a population increase from short-term construction jobs, nor would the program indirectly induce growth by creating an appreciable number of permanent new jobs.

6.1.2 Removal of Obstacles to Additional Growth

No expansion of utilities (i.e., domestic water or sewer infrastructure, wastewater treatment, or stormwater treatment) is included in the proposed program. No new, additional transportation facilities are proposed, nor is there any proposal to increase the capacity of existing transportation facilities. Therefore, if insufficient capacity in any of these areas were to limit growth in study area communities, the proposed program would not influence this condition.

The proposed program would provide a higher level of flood protection for many areas currently protected by facilities of the State Plan of Flood Control. With the program, many urban and urbanizing areas that currently are protected against a 100-year flood (a flood with 1 percent risk of occurring in any given year) would receive protection against a 200-year flood (a flood with 0.5 percent risk of occurring in any given year). Also, some areas that currently lack a 100-year level of flood protection would be protected against a 100-year or greater flood after improvements to the flood control system were made. There are multiple restrictions on development in areas with less than a 100-year level of flood protection (e.g., Federal Emergency Management Agency regulations, State regulations, local planning and zoning requirements, and consideration as a potentially significant impact under CEQA). Where the proposed program would increase flood protection sufficiently to provide protection equal to or exceeding the 100-year level to an area currently lacking such protection, this increase in flood protection could reduce or remove an obstacle to growth.

Each city and county has adopted a general plan consistent with State law. Some local general plans were prepared and adopted with the assumption

that the plan areas would have a 100-year or greater level of flood protection, and these plans identified development opportunities accordingly. However, levees may have been reevaluated or methods for assessing levels of flood protection may have changed since general plan completion, resulting in the conclusion that those plan areas are no longer protected against a 100-year or greater flood. In these instances, if the proposed program were to improve the flood control system to protect communities against a 100-year or greater flood, cities and counties would simply be able to continue implementing development plans already reflected in their general plans. Increasing flood protection would remove an impediment to growth relative to existing conditions, but the growth that would occur would be consistent with local land use decisions as reflected in each city or county's general plan. Growth-inducing impacts that would result from adoption and implementation of general plans are addressed in general plan EIRs.

Some lands in the program study area that are not planned for development and lack protection against a 100-year flood would likely receive a 100-year or greater level of flood protection after completion of improvements to the flood control system. In this context, the proposed program could remove an impediment to growth, because it could cause development to increase by providing flood protection to areas not currently planned for development in city and county general plans. This scenario is most likely in rural or agricultural areas near urban development, where increasing flood protection for the nearby urban area would also increase flood protection for currently undeveloped areas. With the flood protection level removed as an impediment to growth in these undeveloped areas, the likelihood of future development, associated growth, and resulting environmental impacts increases. The proposed program reflects State policy to discourage urbanization in floodplains. The environmental impacts of such development would likely be among those typically associated with "greenfield" development. Examples of such impacts include increased traffic levels and air pollutant emissions, increased demand for utilities and public services, losses of agricultural land and biological resources, potential adverse effects on cultural resources, and potential degradation of aesthetic resources.

Another potential effect of the proposed program is that, by reducing flood risks, the program is anticipated to protect existing developments and therefore help preserve the results of growth that has already occurred. Improved flood protection would likely reduce the frequency and severity of flood damage, which would reduce the need for reconstruction efforts following a flood, and any indirect growth inducement from those reconstruction activities would be reduced. These effects would not

typically be considered to be growth inducing, but instead would generally benefit the environment.

6.1.3 Growth Inducement Resulting from Changes in Water Supply

As described in Impact HYD-6 (NTMA), "Reduced Long-Term Water Supplies from Reservoir Operational Criteria Changes," in Section 3.13, "Hydrology," changes to the operational criteria for reservoirs included in the proposed program would not have a significant effect on water supplies in the extended systemwide planning area (Extended SPA) or the Sacramento and San Joaquin Valley watersheds. In addition, as described in Section 2.6, "No Near- or Long-Term Reduction in Water or Renewable Electricity Deliveries," implementation of the proposed program would not result in long-term reductions to water deliveries to the SoCal/coastal Central Valley Project/State Water Project (CVP/SWP) service areas. With no significant increase or decrease in water supplies resulting from the proposed program, the program would not affect growth or generate a growth-inducing impact related to water supply.

6.1.4 Growth Inducement Resulting from the 2007 Flood Legislation Requirements for an Urban Level of Flood Protection

Implementing policies included in 2007 flood legislation (e.g., Senate Bill 5) that require an urban level of flood protection—that is, protection against a 200-year flood—could redirect planned development. Specifically, if cities or counties were to find attaining this level of flood protection to be infeasible, they could alter their land use plans by redirecting land uses from areas subject to flood risk to areas that are not similarly exposed (i.e., areas with existing 200-year flood protection). Growth could be redirected geographically; however, for a variety of reasons, it is highly unlikely that the amount of growth anticipated by city and county general plans would increase. For example, existing and planned infrastructure such as water and wastewater treatment plants and transportation systems would accommodate or be planned to accommodate a certain level of population and type of development. Increasing the level of anticipated growth as part of redirecting growth in response to flood protection conditions would require substantial evaluation and redesign of infrastructure systems. Cities and counties would likely attempt to retain development volumes included in existing general plans, but shift development from areas with insufficient flood protection to locations with greater protection. In some instances, growth may decrease if less flood-prone lands were unavailable to accommodate future development. In either scenario, changes in land use patterns resulting from elements of the 2007 flood legislation would not be anticipated to induce growth.

6.2 Significant Irreversible Environmental Changes

The CEQA Guidelines require a discussion of the significant irreversible environmental changes that would be caused by the project should the project be implemented. The irreversible and irretrievable commitment of resources is the permanent loss of resources for future or alternative purposes. Irreversible and irretrievable resources are those that cannot be recovered or recycled, or those that are consumed or reduced to unrecoverable forms. Implementing the CVFPP would result in the irreversible and irretrievable commitment of the following energy and material resources during construction, maintenance, and operation of near-term management activities (NTMAs) and long-term management activities (LTMAs):

- Construction materials, including such resources as soil and rock
- Land and water area committed to new or expanded project facilities
- Energy expended in the form of electricity, gasoline, diesel fuel, and oil for equipment and transportation vehicles that would be needed for project construction, operation, and maintenance

The use of these nonrenewable resources is expected to account for only a small portion of the region's resources and would not substantially affect the availability of these resources for other needs within the region. Construction activities and operation and maintenance of facilities would not use energy or natural resources inefficiently because multiple laws and regulations are enforced in California to prevent or minimize energy usage (e.g., regulations for the reduction of greenhouse gas (GHG) emissions) and to require the design and operation of new buildings and facilities to meet energy efficiency standards (e.g., California Building Code, Title 24). In addition, the inefficient use of energy and resources during construction would not be cost effective for construction contractors implementing NTMAs and LTMAs. These issues are discussed in greater detail in Section 3.9, "Energy." In addition, various mitigation measures included in this PEIR to reduce air quality impacts and GHG emissions would minimize the use of fuels and other energy sources during construction.

6.3 Significant and Unavoidable Impacts

The CEQA Guidelines require a discussion of the significant environmental effects that cannot be avoided. In this PEIR, such impacts are identified as significant and unavoidable.

Based on the environmental resource evaluations presented in Sections 3.2 through 3.21 of this PEIR, implementing the CVFPP could result in the following significant and unavoidable or potentially significant environmental effects that may not be reduced to a less-than-significant level:

- **Agriculture and Forestry Resources**—The proposed program would involve either constructing facilities or implementing management changes in some areas currently subject to agricultural production. The program also includes an extensive set of mitigation measures, such as avoiding Important Farmland where feasible and considering agricultural conservation easements. However, given the nature and scale of certain elements of the proposed program, particularly the proposed expansion of bypasses and creation of additional habitat areas, this impact is considered potentially significant and unavoidable. The scope of this potentially significant and unavoidable impact is limited to those situations where identified Important Farmlands cannot be avoided, and feasible mitigation is not adequate to reduce the impact to a less-than-significant level.

- **Air Quality**—Construction-period emissions of air pollutants for some of the larger projects that are anticipated to occur could exceed the CEQA thresholds established by certain air pollution control districts, even after feasible mitigation is implemented, resulting in a potentially significant and unavoidable impact. The scope of this potentially significant and unavoidable impact is temporary and limited to these larger projects for which emissions could exceed applicable air district CEQA thresholds.

- **Biological Resources—Aquatic**—The proposed program includes a requirement to undertake all activities in compliance with all applicable regulatory requirements, including requirements that call for full mitigation of any effects on aquatic habitats. The program also includes enhancements to aquatic biological resources, particularly under the CVFPP Conservation Framework. This PEIR also establishes a set of mitigation measures designed to achieve an overall performance standard of no net loss of biological resource functions and values. As a result, impacts on aquatic biological resources generally are anticipated to be less than significant. However, given the scope and nature of the program, there may be situations in which local or temporary effects could not be fully mitigated. If those effects were of a sufficient scale, they could result in potentially significant and unavoidable impacts.

- **Biological Resources—Terrestrial**—The proposed program includes a requirement to undertake all activities in compliance with all applicable

regulatory requirements, including requirements that call for full mitigation of any effects on terrestrial habitats. The program also includes enhancements to terrestrial biological resources, particularly under the CVFPP Conservation Framework, and including riparian forest planting. This PEIR also establishes a set of mitigation measures designed to achieve an overall performance standard of no net loss of biological resource functions and values. As a result, impacts on terrestrial biological resources generally are anticipated to be less than significant. However, given the scope and nature of the program, there may be situations in which local or temporary effects could not be fully mitigated. If those effects were of a sufficient scale, they could result in potentially significant and unavoidable impacts.

- **Cultural and Historical Resources—**Much of the proposed program would occur in areas that have already been disturbed by agricultural and other activities and/or have been in flood protection uses for a long time. However, it is anticipated that some cultural and historical resources and/or traditional cultural properties may be encountered during activities under the proposed program. The program includes extensive mitigation measures requiring the identification and avoidance of these resources, where feasible, and documentation of the resource whenever the resource cannot be avoided. However, given the nature and scale of the proposed program, there may be situations in which historic properties must be removed or traditional cultural properties would be adversely affected in a way that could not be feasibly mitigated to a less-than-significant level, resulting in potentially significant and unavoidable impacts.

- **Mineral and Paleontological Resources**—Much of the proposed program would occur in areas that have already been disturbed by agricultural and other activities and/or have been in flood protection uses for a long time. Mining activity is generally precluded within or in the immediate vicinity of existing flood protection structures, such as levees, to preserve the stability of those structures. However, widening floodways and constructing weirs, new bypasses, or setback levees outside the existing footprint or the immediate vicinity of the footprint of existing structures could prevent access to locally valuable mineral resources (particularly aggregate materials), resulting in potentially significant and unavoidable impacts.

- **Land Use and Planning**—The significant and unavoidable impacts on agricultural resources, described above, are also considered to reflect corresponding significant and unavoidable land use impacts of the same nature and scope.

- **Transportation and Traffic**—Operation and maintenance of projects under the proposed program would not generate substantial long-term traffic. Also, construction traffic for most projects could be accommodated by the existing circulation system without resulting in significant impacts. However, for very large construction projects (i.e., those for which several million cubic yards of fill must be transported over public roads), significance thresholds recommended by the Institute of Transportation Engineers could be exceeded and it may not be feasible to reduce peak-hour construction traffic sufficiently to fall below the threshold, resulting in a potentially significant and unavoidable impact. In addition, in rare situations, projects could require that transportation infrastructure be removed or disrupted for a substantial period of time, but using detours or alternate routes may not be feasible, resulting in a potentially significant and unavoidable impact.

6.4 Impacts of Mitigation Measures

Section 15126.4(a)(1)(D) of the CEQA Guidelines calls for a discussion of any significant effects that may be caused by mitigation measures, although the discussion shall be in less detail than the discussion of significant effects of the project as proposed.

Mitigation measures proposed by this PEIR are intended to mitigate significant and potentially significant impacts that may occur as a result of implementation of the proposed program; however, some mitigation measures could result in additional environmental impacts. In particular, mitigation calling for habitat restoration, creation, and enhancement would cause changes in the physical environment that may result in adverse impacts.

Depending on the specific location, habitat restoration and creation could require the conversion of agricultural land to habitat, including removal of Important Farmlands from agricultural production.

Habitat restoration, creation, and enhancement activities could also require the use of heavy mechanized equipment such as bulldozers, trucks, and backhoes, all of which may have substantial temporary impacts during construction. Potential construction-related impacts include the emission of GHGs and criteria air pollutants, noise and vibration, and increased traffic on nearby roadways from vehicles moving equipment, construction materials, and personnel.

Habitat restoration, creation, and enhancement in floodways could alter local hydrology, potentially impeding flood flows and/or increasing local water velocities, thus resulting in erosion.

Earth-moving activities associated with habitat restoration, creation, and enhancement also have the potential to disturb archaeological resources located at or near the ground surface. Disturbance of archaeological resources could impair the integrity of the resource and the potential for the resource to provide information important about the area's history and prehistory.

6.5 Environmental Justice

This section describes the environmental and regulatory settings of environmental justice, including environmental consequences, as they pertain to implementation of the CVFPP.

6.5.1 Background

Environmental justice is the analysis of the potential effects of a proposed project on minority and low-income populations to determine whether the project would create a disproportionate burden on these groups relative to the project's benefits. The environmental justice policy of CNRA and State law define environmental justice as the "fair treatment of people of all races, cultures and income with respect to the development, adoption, implementation and enforcement of environmental laws, regulations, and policies" (California Government Code, Section 65040.12).

6.5.2 California Natural Resources Agency Policy

CNRA's environmental justice policy requires that environmental justice be considered during the decision-making process for actions taken by CNRA. The following actions are subject to environmental justice analysis (CNRA 2010):

- Adopting regulations
- Enforcing environmental laws or regulations
- Making discretionary decisions or taking actions that affect the environment
- Providing funding for activities that affect the environment
- Interacting with the public on environmental issues

It is CNRA policy that (1) minority and low-income populations must be informed of opportunities to participate in the development and implementation of CNRA actions, and (2) such groups must not suffer high and adverse human health or environmental effects from environmental decisions.

CNRA's environmental justice policy does not define "minorities"; therefore, the definition used by the Council on Environmental Quality (CEQ) is used for this analysis. CEQ (1997) defines the term "minority" as persons from any of the following U.S. Census categories for race: Black/African American, Asian, Native Hawaiian or Other Pacific Islander, and American Indian or Alaska Native. Additionally, for the purposes of this analysis, "minority" also includes all other nonwhite racial categories that were added in the 2000 census, such as "some other race" and "two or more races." CEQ also mandates that persons identified through the U.S. Census as ethnically Hispanic be included in minority counts, regardless of their race (CEQ 1997).

6.5.3 Demographic and Income Profiles

This section identifies the demographic and income profiles of counties located in the following geographic areas within the study area:

- Extended SPA divided into the Sacramento and San Joaquin Valley and foothills and the Sacramento–San Joaquin Delta (Delta) and Suisun Marsh
- Sacramento and San Joaquin Valley watersheds
- SoCal/coastal CVP/SWP service areas

Considerable overlap exists in the demographic data available for the Extended SPA and for the Sacramento and San Joaquin Valley watersheds (i.e., data for a county covers portions of both segments of the program study area); therefore, those geographic areas are discussed together in this section. (See Section 3.16, "Population, Employment, and Housing," for more information on this topic.) None of the management activities included in the proposed program would be implemented in the SoCal/coastal CVP/SWP service areas. In addition, implementation of the proposed program would not result in long-term reductions in water deliveries to the SoCal/coastal CVP/SWP service areas (see Section 2.6, "No Near- or Long-Term Reduction in Water or Renewable Electricity Deliveries"). Given these conditions, little to no effect on environmental justice is expected in this portion of the study area; therefore, this geographic area is not discussed in detail in this section.

Demographic data were collected from the 2000 U.S. Census for counties in the study area. Data from the 2000 census were used for the analysis because such data were the best complete data set available at the time of writing of this chapter; data from the 2010 U.S. Census were not yet complete. (See Section 3.16, "Population, Employment, and Housing," for more information on this topic.) These data identify counties that have significant minority and low-income populations. Minority and low-income populations were deemed significant if they constituted 50 percent or more of the total population of the relevant geographic unit.

Low-income populations were identified from Summary File 3 of the 2000 U.S. Census by identifying all individuals in each county who earned income below the poverty threshold at the time of the 2000 U.S. Census.

Tables 6.5-1 and 6.5-2 list the total minority and low-income populations of each county within the program study area as a percentage of the total. These numbers are expressed as proportions (percentages) because the relative fraction of a geographic unit that has minority or low-income status indicates the potential for the effects of a proposed project to affect these populations disproportionately.

Table 6.5-1. Environmental Justice Demographics for the Extended Systemwide Planning Area and the Sacramento and San Joaquin Valley Watersheds

County	Total Minority Population (%)[1]	Significant Individual Minority Populations?	Hispanic Population (%)[1]	Low-Income Population (%)[1]
Alameda	**59.1**	**Yes**	19.0	11.0
Alpine	28.2	No	7.8	19.5
Amador	17.6	No	8.9	9.2
Butte	20.0	No	10.5	19.8
Calaveras	12.5	No	6.8	11.8
Colusa	**52.0**	**Yes**	46.5	16.0
Contra Costa	42.1	No	17.7	7.6
El Dorado	15.1	No	9.3	7.1
Fresno	**60.3**	**Yes**	44.0	22.9
Glenn	37.4	No	29.6	18.1
Kern	**50.5**	**Yes**	38.4	20.7
Kings	**58.4**	**Yes**	43.6	19.5
Lake	19.5	No	11.4	17.6
Lassen	29.4	No	13.8	14.0
Madera	**53.4**	**Yes**	44.3	21.4
Mariposa	15.1	No	7.8	14.8

Table 6.5-1. Environmental Justice Demographics for the Extended Systemwide Planning Area and the Sacramento and San Joaquin Valley Watersheds (contd.)

County	Total Minority Population (%)[1]	Significant Individual Minority Populations?	Hispanic Population (%)[1]	Low-Income Population (%)[1]
Merced	**59.4**	**Yes**	45.3	21.7
Modoc	18.9	No	11.5	21.5
Napa	30.6	No	23.7	8.3
Nevada	9.7	No	5.7	8.0
Placer	16.6	No	9.7	5.8
Plumas	11.3	No	5.7	13.0
Sacramento	42.2	No	16.0	14.1
San Benito	47.9	No	47.9	10.0
San Joaquin	**52.6**	**Yes**	30.5	17.7
Shasta	13.6	No	5.5	15.4
Sierra	9.7	No	6.0	11.3
Siskiyou	16.7	No	7.6	18.6
Solano	**50.8**	**Yes**	17.6	8.3
Stanislaus	42.7	No	31.7	16.0
Sutter	39.8	No	22.2	15.53
Tehama	21.5	No	15.8	17.3
Tuolumne	14.9	No	8.2	11.4
Yolo	42.0	No	25.9	18.4
Yuba	34.7	No	17.4	20.8

Source: U.S. Census Bureau 2000
Notes:
Bold denotes 50 percent or greater proportion of the total population.
[1] Expressed as a percentage of the total population.

Table 6.5-2. Environmental Justice Demographics for the SoCal/ Coastal CVP/SWP Service Areas

County	Total Minority Population (%)[1]	Significant Individual Minority Populations (Not Hispanic or Latino)?	Hispanic/ Latino Population (%)[1]	Low-Income Population (%)[1]
Imperial	**79.8**	**Yes**	79.8	22.6
Los Angeles	**68.9**	**Yes**	44.6	17.9
Orange	48.7	No	30.8	10.3
Riverside	49.0	No	36.2	14.2
San Bernardino	**56.0**	**Yes**	39.2	15.8
San Diego	45.0	No	26.7	12.4

Table 6.5-2. Environmental Justice Demographics for the SoCal/ Coastal CVP/SWP Service Areas (contd.)

County	Total Minority Population (%)[1]	Significant Individual Minority Populations (Not Hispanic or Latino)?	Hispanic/ Latino Population (%)[1]	Low-Income Population (%)[1]
San Luis Obispo	23.9	No	16.3	12.8
Santa Barbara	43.1	No	34.2	14.3
Santa Clara	**55.8**	**Yes**	24.0	7.5
Ventura	43.2	No	33.4	9.2

Source: U.S. Census Bureau 2000

Notes:
Bold denotes 50 percent or greater proportion of the total population.
[1] Expressed as a percentage of the total population.

The total minority population for each county was calculated by retrieving county census data, which indicated the total population and the population that reported as "white alone" (not Hispanic or Latino, not any other race). The "white alone" category was subtracted from the county's total population to express the remaining population (all individuals who reported as Hispanic, Latino, or nonwhite races). The U.S. Census Bureau calculates and reports the Hispanic or Latino population as coming from a place of geographic origin that overlaps with the geographic origins of the different races (all persons from Latin America and portions of the Caribbean are reported as Hispanic or Latino). Thus, the total minority population can be identified by subtracting the number of individuals who report as "white alone" from the total population (U.S. Census Bureau 2000: Summary File 1, P8. *Hispanic or Latino by Race*).

Low-income populations were identified from Summary File 3 of the 2000 U.S. Census by identifying all individuals within each county who earned income below the poverty threshold at the time of the 2000 U.S. Census.

The following counties in the Extended SPA and the Sacramento and San Joaquin Valley watersheds had significant total minority populations:

- Alameda (59.1 percent)
- Colusa (52 percent)
- Fresno (60.3 percent)
- Kern (50.5 percent)
- Kings (58.4 percent)
- Madera (53.4 percent)
- Merced (59.4 percent)

- San Joaquin (52.6 percent)
- Solano (50.8 percent)

The following counties in the SoCal/coastal CVP/SWP service areas had significant minority populations:

- Imperial (79.8 percent)
- Los Angeles (68.9 percent)
- San Bernardino (56.0 percent)
- Santa Clara (55.8 percent)

No county had an individual ethnic/minority group that constituted 50 percent or more of the total population, or a low-income population that constituted 50 percent or more of the total population.

Identifying environmental justice populations at the county level provides a broad means of identifying the potential for impacts on these populations. However, it is possible that environmental justice impacts could occur at a more localized level where individual communities support large minority or low-income populations. It is also possible that disproportionate impacts could occur in instances where environmental justice groups do not constitute more than 50 percent of the total population.

To refine the data available for determining environmental justice impacts, the locations of individual census tracts with significant minority or low-income populations were determined. Figures 6.5-1 and 6.5-2 identify locations where total minority or low-income populations, respectively, constitute more than 50 percent of the population. Figure 6.5-2 reveals that census tracts with low-income populations exceeding 50 percent of the total population occur in very concentrated and discrete clusters. Many of these clusters are associated with particular land-use patterns, such as universities, senior housing, and prisons.

Land available for agriculture could be affected by the proposed program. Minority participation in farm employment is high—99 percent of farmworkers qualify as minorities according to the State of California (Aguirre International 2005:10)—and median incomes for less-skilled workers in the farming industry are lower than for other industries.

Figure 6.5-1. Census Tracts in the Study Area with Minority Populations

Figure 6.5-2. Census Tracts in the Study Area with Low-Income Populations

Therefore, adverse effects on agriculture in particular could be considered as disproportionately high effects on environmental justice populations. For example, according to the CEQ guidance, agencies may consider environmental justice communities either as a group of individuals living in geographic proximity to one other or as "a geographically dispersed/transient set of individuals (such as *migrant workers* or Native American[s]), where either type of group experiences common conditions of environmental exposure or effect" [emphasis added]. Therefore, this analysis considers the potential consequences for environmental justice populations of the program's effects primarily on agriculture.

6.5.4 Impact Analysis

This section describes the relative effects that the CVFPP could have on minority and low-income populations in the study area. Demographic information is used to determine whether minority populations or low-income populations are present in the area potentially affected by the CVFPP. If so, a determination is made whether implementing the CVFFP may cause disproportionately high and adverse human health or environmental impacts on those populations. Impacts that would be significant and unavoidable, or potentially significant and unavoidable, after mitigation are those considered to have the potential to result in environmental justice impacts, because impacts that would be less than significant before or after mitigation would not cause a disproportionately high adverse effect. Impacts that could cause disproportionately high and adverse effects are presented in Table 6.5-3.

Table 6.5-3. Impacts Potentially Causing Adverse Environmental Justice Effects

Significant and Unavoidable/Potentially Significant and Unavoidable Impact	Potential Environmental Justice Effect?
Impact AG-1 (NTMA & LTMA): Conversion of Substantial Amounts of Important Farmland to Nonagricultural Uses and Conversion of Land under Williamson Act Contracts to an Inconsistent Use Resulting from Conveyance-Related Management Activities	Yes
Impact AG-3 (NTMA &LTMA): Effects of Other NTMAs [and LTMAs] on Important Farmland and Williamson Act Contract Land	Yes
Impact AQ-1 (NTMA & LTMA): Construction-Related Emissions of Criteria Air Pollutants and Ozone Precursors Resulting from Conveyance and Other Components that Could Exceed Local CEQA Thresholds of Significance	No
Impact AQ-3 (LTMA): Potential for Long-Term Operational and Maintenance-Related Emissions of Criteria Air Pollutants and Ozone Precursors to Exceed Local CEQA Thresholds of Significance	No

Table 6.5-3. Impacts Potentially Causing Adverse Environmental Justice Effects (contd.)

Significant and Unavoidable/Potentially Significant and Unavoidable Impact	Potential Environmental Justice Effect?
Impact AQ-4 (NTMA & LTMA): Construction-Related and Operational Emissions from Conveyance and Other NTMAs [or LTMAs] that Could Result in Cumulatively Considerable Net Increases in Criteria Air Pollutants for Which the Project Region is Nonattainment under Applicable Federal or State Ambient Air Quality Standards	No
Impact BIO-A-2 (NTMA & LTMA): Effects on Special-Status Fish, Fish Movement, Nursery Ground Usage, Riparian Habitat, Designated Critical Habitat, and Essential Fish Habitat Caused by Loss of Overhead Cover and Instream Woody Material as Part of the Vegetation Management Strategy	No
Impact BIO-A-3 (LTMA): Effects on Special-Status Fish, Fish Movement, Nursery Ground Usage, Riparian Habitat, Designated Critical Habitat, and Essential Fish Habitat Caused by Loss of Overhead Cover and Instream Woody Material during Construction	No
Impact BIO-A-5 (NTMA & LTMA): Effects on Special-Status Fish, Fish Movement, Nursery Ground Usage, Riparian Habitat, Designated Critical Habitat, and Essential Fish Habitat Caused by Rock Placement	No
Impact BIO-T-7 (NTMA & LTMA): Effects of the Vegetation Management Strategy on Sensitive Natural Communities and Habitats, Special-Status Plants and Wildlife, and Wildlife Movement	No
Impact CUL-3 (NTMA & LTMA): Potential Damage or Disturbance to or Change in Significance of Built-Environment Resources	No
Impact CUL-4 (NTMA & LTMA): Potential Damage or Disturbance to Traditional Cultural Properties during Ground Disturbance or Other Construction-Related Activities	Yes
Impact GEO-5 (LTMA): Potential Loss of Availability of a Known Mineral Resource of Value	Yes
Impact LU-5 (NTMA & LTMA): Alterations of Land Uses or Patterns of Land Use as a Result of Conveyance-Related Management Activities that Could Cause a Substantial Adverse Physical Environmental Effect	Yes
Impact LU-8 (NTMA & LTMA): Alterations of Land Uses or Patterns of Land Use as a Result of Other NTMAs [and LTMAs] that Would Cause a Substantial Adverse Physical Environmental Effect	Yes
Impact TRN-1 (LTMA): Temporary Increases in Traffic from Construction Activities	No
Impact TRN-2 (LTMA): Removal or Temporary Disruption of Current Transportation Infrastructure	No

Key:
CEQA =California Environmental Quality Act
LTMA = long-term management activity
NTMA = near-term management activity

No Disproportionate Effects

Violations of air quality standards or contributions of criteria pollutants to existing air quality violations resulting from construction, operations, or maintenance activities would not accrue disproportionately to minority or low-income groups. Air quality violations occur within an air basin, adversely affecting all people living within the air basin. An environmental justice concern would arise if a project were to propose a new source of toxic air contaminants in concentrations that would affect the health of a local population. The CVFPP does not propose any new point-source emissions that fit this criterion.

Implementing the CVFPP could result in localized reductions in the extent of general riparian habitat and riparian habitat that functions as shaded riverine aquatic habitat. The geographic extent of shaded riverine aquatic habitat is large but not contiguous, encompassing the waterways of the Sacramento and San Joaquin Valley and foothills. A localized reduction in shaded riverine aquatic habitat could affect the quality of habitat in the specific area, and therefore the type and abundance of fish congregating in that particular location. Several special-status and game fish species could be affected as described in Subsection 3.5.4, "Environmental Impacts and Mitigation Measures for NTMAs," of Section 3.5, "Biological Resources—Aquatic." Minority and low-income residents may disproportionately use local game fish species as subsistence resources. Losses of shaded riverine aquatic habitat could result in reduced quality of fishing opportunities in that particular location. However, as described in Section 3.5, implementation of the CVFPP Conservation Strategy and mitigation measures in this PEIR would ensure that there would be no net loss in overall extent, functions, and values of shaded riverine aquatic habitat in the study area. Small, very localized losses of shaded riverine aquatic habitat and associated potential reductions in fishing quality would be compensated for by restored, enhanced, or created shaded riverine aquatic habitat elsewhere. The overall quality and accessibility of fishing opportunities would not be adversely affected, and continued fishing opportunities would remain available to all groups in all geographic areas. The effects and benefits of the proposed program would not affect any one group of people more than any other. Therefore, disproportionate effects on minority and low-income populations would be unlikely from potential reductions in fishing quality caused by the loss of shaded riverine aquatic habitat.

Effects on sensitive natural communities and habitats and special-status plants and wildlife would be similar to those described above for aquatic resources, limited to potential localized reductions in the quality or extent of riparian habitat that would be fully compensated for through restoration, enhancement, and creation of riparian habitat. The values of special

habitats, plants, and wildlife and the protection of and access to these resources are enjoyed by all Californians. The extent to which habitats and the distribution of species would change as a result of the proposed program would affect every California resident equally.

Significant and unavoidable impacts on the built environment after mitigation would not result in a disproportionate effect on minority or low-income populations. The values of significant historic resources, such as bridges, structures, and landscapes, are enjoyed by all Californians. The extent to which the elements that contribute to the significance of historic resources would change would affect every Californian equally.

Temporary disruptions to traffic and traffic infrastructure during project construction could occur at various locations in the Extended SPA. Communities composed of various socioeconomic and ethnic groups (e.g., local residents, employees, through travelers and commuters) would use roadways that would be temporarily affected during construction. Therefore, disproportionate effects on minority and low-income populations would be unlikely.

By reducing flood risks, the proposed program is anticipated to have beneficial effects on public safety. The program proposes a balanced approach that provides increased protection for both urban and rural/agricultural areas. As a result, the benefits would be widespread and would not accrue disproportionately to any racial or economic group.

Possible Disproportionate Effects on Minorities and Low-Income Groups

The discussion below identifies significant and unavoidable impacts resulting from the proposed program that could generate environmental justice effects. Individual projects that could generate these significant and unavoidable impacts might benefit from a project-specific environmental justice evaluation, considering site-specific and project-specific effects on local minority or low-income populations.

Implementing various NTMAs and LTMAs could result in the conversion of Important Farmland to a nonagricultural use and conversion of land under Williamson Act contracts to a use inconsistent with the contract. These significant and unavoidable impacts would not be expected to disproportionately affect specific geographic concentrations of low-income populations or minority groups, because the effects would be distributed across broad geographic areas of the state. However, the agricultural workers affected by reduced acreage of farmland would be disproportionately racial and/or ethnic minorities relative to California's demographics. The percentage of low-income agricultural workers who

work in this area is also high. Thus, disproportionate effects on minority and low-income populations could occur. Likewise, industries that rely on agricultural products could be adversely affected, causing a reduction in the number of jobs. Job losses in the agricultural processing sectors could disproportionately affect minority or low-income populations.

Significant and unavoidable land use impacts relate to the same conversions of Important Farmland and Williamson Act land described above (see Section 3.14, "Land Use and Planning"). The same conclusions applied above would apply to land use impacts.

Implementing large-scale LTMAs under the CVFPP (e.g., construction of new flood bypasses, large setback levees) could result in the loss of availability of known mineral resources of value. Miners and workers in the associated mining sector who may be affected by reduced availability of minerals are disproportionately racial and/or ethnic minorities relative to California's demographics. The percentage of low-income workers who work in the mining sector is also high. Thus, disproportionate effects on minority and low-income populations could occur.

Impacts on traditional cultural properties, such as sacred sites or traditional material gathering sites, by definition, are an environmental justice concern because they often affect Native Americans. Because there is the potential that traditional cultural properties important to Native Americans may not always be avoided or effects otherwise mitigated to a less-than-significant level during implementation of NTMAs and LTMAs, disproportionate effects on a minority population could occur.

6.6 Effects of Global Climate Change on Program Facilities and Operations

The impact discussions in Section 3.7, "Climate Change and Greenhouse Gas Emissions," evaluated how implementing the proposed program would generate GHG emissions and contribute to global climate change. Conversely, it is anticipated that current and future effects of global climate change could affect the program's facilities and operations.

Two primary categories of potential climate change effects are related to flood management under the CVFPP: precipitation and runoff patterns and sea level rise. In this section, an evaluation of the potential for these climate change effects to influence the proposed program is first evaluated for conveyance and storage facilities. The analysis then addresses the potential effects on other management actions included in the proposed program—in this case, ecosystem management elements.

6.6.1 Potential Effects of Global Climate Change on Program Conveyance and Storage Facilities and Operations

Change in Precipitation and Runoff Patterns

Historically, about 15 million acre-feet of runoff in California (including about 14 million acre-feet estimated in the Central Valley) originated from snowpack that accumulated in winter and melted gradually from April through July (DWR 2008). About two-thirds of the runoff in the Central Valley originates from the Sacramento River watershed (DWR 2006). California's natural rivers, lakes, and wetlands, together with human-made water storage and conveyance infrastructure, detain a portion of the melting snow while the majority of runoff passes through the system and flows into the Delta.

Increased temperatures resulting from climate change are expected to alter precipitation and runoff patterns. The anticipated effects include increases in snow-line elevations, earlier snowmelt, more precipitation falling as rain instead of snow, and reduced snowpack volume. Knowles and Cayan (2002) found that the combination of warmer storms and earlier snowmelt may cause total snow accumulation in the watersheds in April to drop by 5 percent of present levels by 2030, 36 percent by 2060, and 52 percent by 2090. Already, a greater proportion of annual runoff has been occurring earlier in a water year (Knowles et al. 2006). The combination of earlier snowmelt and shifts from snowfall to rainfall seems likely to increase flood peak flows and flood volumes (Miller et al. 2003; Fissekis 2008; Dettinger et al. 2009), which is likely to affect associated flood risk. Higher snow lines could increase flood risk because a larger watershed area would contribute to direct runoff. From an operations and maintenance viewpoint, these higher snow lines could increase erosion rates, thus resulting in greater sediment loads and turbidity, altering channel shapes and depths, and possibly increasing sedimentation behind dams and affecting habitat and water quality (DWR 2008).

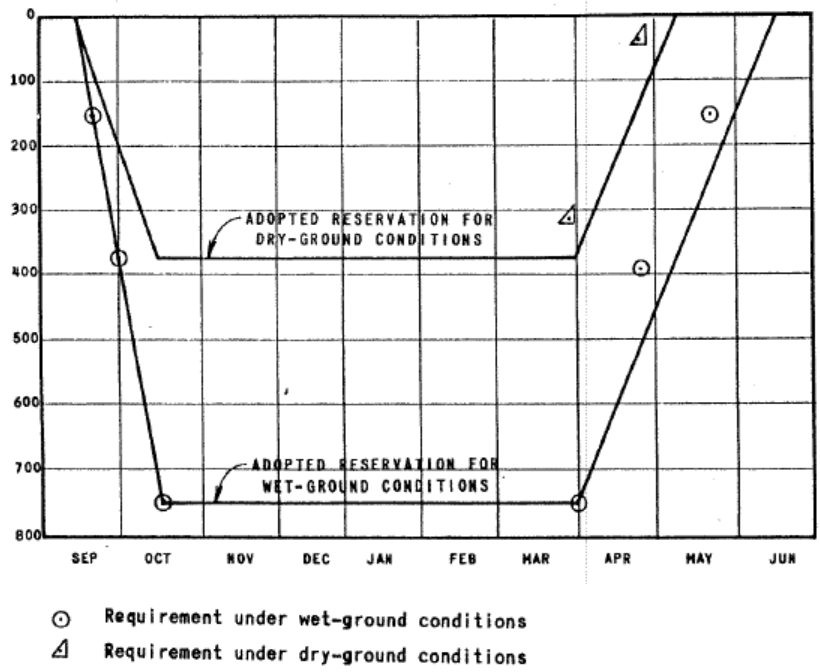
Climate change is also expected to alter the nature of atmospheric river (AR) storms in California. AR storms are a particularly dangerous subset of flood-generating storms. One well known type of AR storm is the "Pineapple Express," which moves intensive bands of warm, moist air from the tropics near Hawaii northeastward into California. In the simplest terms, ARs are narrow intense bands of moist air that deliver moisture to a particular area for varying lengths of time. Historically, the most dangerous storms in California have been warm, wet storms in the winter and spring months that have produced intense rains over large areas and concurrently accelerating snowmelt. These types of storms are frequently associated

with AR conditions. AR storms are now increasingly understood to be the source of most of the largest floods in California (Dettinger 2011).

Climate change could affect the occurrence of AR storms in California, potentially causing such storms to become more frequent, last longer, and become more intense (Dettinger 2011), and thus also increasing the potential frequency and intensity of flood events.

Just as climate change is expected to change the magnitude and frequency of flooding, the same effect is expected relative to forest fires because of drier warm-season fuel conditions. An increase in the frequency and severity of wildfires (CNRA 2009) reduces the availability of vegetation that absorbs runoff; as a result, runoff, erosion, and sedimentation increase further.

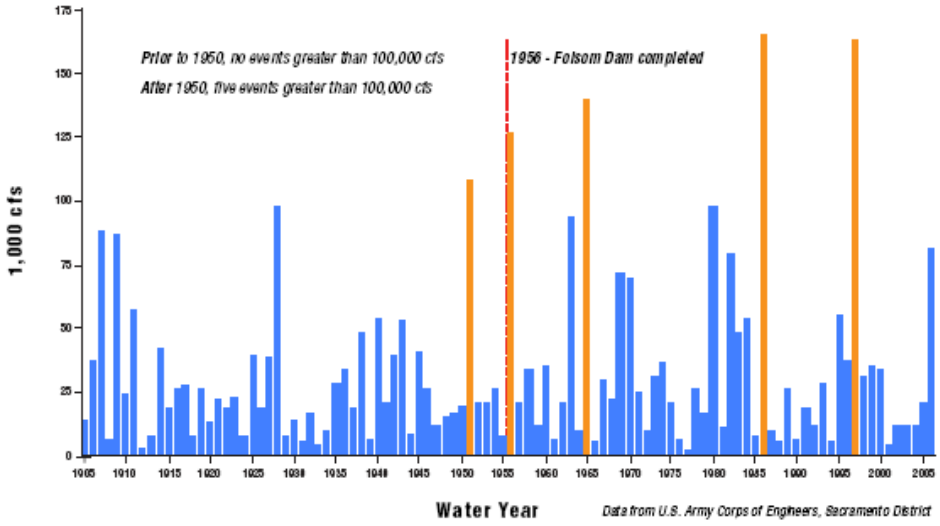
For reservoirs downstream from substantial mountain snowpack, the resulting shift in the timing of reservoir inflows could pose challenges to managing flood storage capacity and water supply, particularly if reservoir operations are not modified to accommodate the new conditions (DWR 2006; Medellin-Azuara et al. 2008; Fissekis 2008). Flood control space requirements are generally determined by using reservoir rule curves as a function of accumulated snowpack forecasts, measured rainfall, and the seasonality of precipitation. Existing rule curves for major flood control reservoirs are based on local watershed hydrology prior to dam design. For example, Lake Oroville is constrained to a seasonal flood control storage range of 375–750 thousand acre-feet depending on soil moisture conditions (Figure 6.6-1) (USACE 1970). Changes in precipitation form (snow versus rain), the associated shifts in runoff timing, and potential increases in flood frequencies and magnitudes are likely to require reevaluation of the existing operational rules.



Source: USACE 1970

Figure 6.6-1. Seasonal Flood-Control Space Requirements for Lake Oroville

Figure 6.6-2 shows 3-day peak flows of American River runoff in the past century (DWR 2008). Folsom Dam, on the American River just east of Sacramento, was designed in the late 1940s and built in the 1950s. Figure 6.6-2 shows that the designers of Folsom Dam would have seen no 3-day peak flows exceeding 100,000 cubic feet per second (cfs) in the historical record of the time. However, since 1950, there have been five events with 3-day peak flows greater than 100,000 cfs. These recent high peak-flow volumes have resulted in a recharacterization of the level of flood protection offered by Folsom Dam (DWR 2008).



Source: DWR 2008 (with top five annual maximum 3-day flows highlighted)

Figure 6.6-2. American River Runoff, Annual Maximum 3-Day Flow

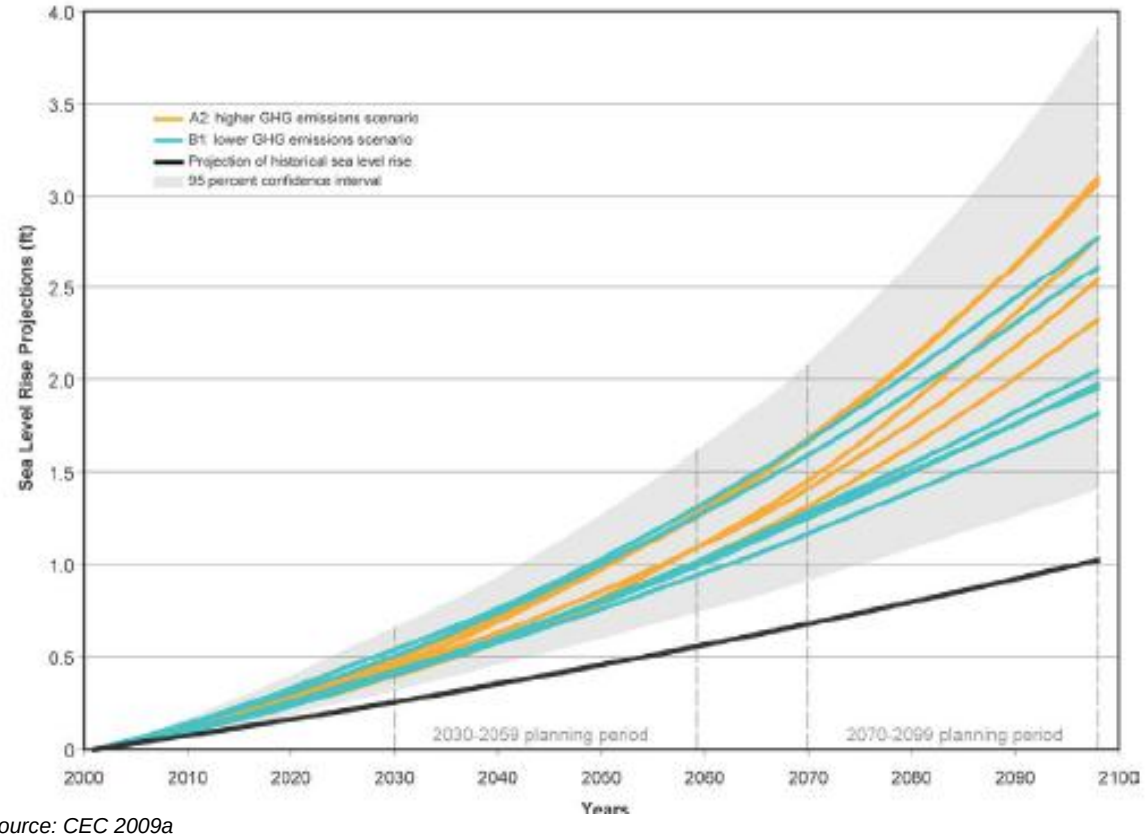
Sea Level Rise

Increasing temperatures also result in sea level rise as land-based glaciers, snowfields, and ice sheets melt and the ocean's surface layer warms and thermally expands (DWR 2008). In the last century, sea level has risen about 20 centimeters (7 inches) along California's coast (DWR 2008). Recent studies suggest that since 1990, global sea level has risen at a rate of approximately 3.5 millimeters (0.14 inch) per year (CALFED 2007). For the purposes of the PEIR, analysis of the impacts of sea level rise is limited to the western edges of the Systemwide Planning Area.

In the Systemwide Planning Area, impacts of sea level rise would be most substantial in the Delta, where a rise in sea level could result in a rise in water surface elevations in some Delta waterways. Such a rise in water surface elevations could increase hydrostatic pressure on levees that protect low-lying land, much of which is already below sea level, and therefore potentially increase the risk of levee failure from underseepage or throughseepage. Inland waterways affected by sea level rise could also experience higher water surface elevations during flood events, potentially increasing the risk of levee overtopping. Roos (2005) found that a 1-foot rise in sea level could increase the frequency of the 100-year peak high tide to a 10-year event in the western Delta at Antioch. The resulting higher tides would likely aggravate existing flood problems in upstream areas along the Sacramento and San Joaquin rivers by increasing flood surface elevations during high-water events.

Although it is generally accepted that sea levels will continue to rise on a global scale, the exact rate of rise remains unknown. Recent peer-reviewed studies estimate that sea level will rise between 0.6 foot and 4.6 feet along

California's coast by 2100 (CEC 2009a). Another set of projections, based on 12 future climate scenarios selected by the California Climate Action Team, indicates a 1.8- to 3.1-foot rise in sea level by 2100 (Figure 6.6-3). In addition to the California Climate Action Team's projections, even the most conservative estimates, which follow historical trends in sea level rise with no increase in the rate of rise as temperatures warm, indicate an approximately 1-foot increase in the sea level of San Francisco Bay by 2100 (CEC 2009a). In 2011, the California Ocean Protection Council (OPC) adopted a resolution providing guidance for the State of California on potential levels of future sea level rise (OPC 2010). The council compiled estimates of sea level rise from various sources and provided the data shown in Table 6.6-1.



Source: CEC 2009a

Figure 6.6-3. Sea level Rise Projections Based on Air Temperatures from 12 Future Climate Scenarios

Table 6.6-1. Estimates of Future Sea-Level Rise by the California Ocean Protection Council

Year	Future Greenhouse Gas Emissions Scenario[1]	Average of Models	Range of Models
2030	NA	7 in (18 cm)	5–8 in (13–21 cm)
2050	NA	14 in (36 cm)	10–17 in (26–43 cm)
2070	Low	23 in (59 cm)	17–27 in (43–70 cm)
	Medium	24 in (62 cm)	18–29 in (46–74 cm)
	High	27 in (69 cm)	20–32 in (51–81 cm)
2100	Low	40 in (101 cm)	31–50 in (78–128 cm)
	Medium	47 in (121 cm)	37–60 in (95–152 cm)
	High	55 in (140 cm)	43–69 in (119–176 cm)

Source: OPC 2010
Notes:
Increases in sea level use the year-2000 sea level as a baseline.
[1] For dates after 2050, three different values for sea-level rise are shown based on low, medium, and high future greenhouse gas emission scenarios. These values are based on emission scenarios of the Intergovernmental Panel on Climate Change.
Key:
cm = centimeters
in = inches
NA = not applicable

Effects on the Proposed Program

Potential consequences of future climate change are described above; however, there remains substantial uncertainty about the extent to which various components of climate change will alter future precipitation and runoff patterns and generate sea level rise and the extent to which the changes could affect the proposed program. However, regardless of the extent of actual climate change and its effects, the proposed program's improvements to the flood control system would act to increase the system's resilience to future changes. The stronger levees and wider floodways that would result from the proposed program would enable the flood control system to respond more effectively to higher flows, increased flood stage elevations, and erosion. The greater flexibility in reservoir operations provided by the proposed program could enable the use of additional reservoir management options to respond to the effects of climate change. Compared to existing conditions, the proposed program would provide a net benefit to the ability of the flood control system to withstand the adverse effects of climate change.

It should be noted that efforts are continually under way to improve and refine the tools and modeling available to predict the future extent and effects of climate change; during future updates to the CVFPP, the best available information will be used to incorporate climate change considerations into the planning effort.

6.6.2 Potential Effects of Global Climate Change on Operation and Maintenance of Other Management Actions

Within the category of "other management actions" included in the CVFPP, the effects of global climate change have the potential to adversely affect habitat creation completed as part of the CVFPP Conservation Strategy.

Climate Change Effects on Ecosystems

Ecosystems are naturally dynamic and have changed over time, but the ecosystem effects of climate change are likely to be exacerbated by the loss of natural areas experienced in the last 50 years (CEC 2009b) and by the relatively rapid rate at which climate change and other stressors are advancing. The abundance, production, distribution, and quality of native ecosystems throughout California are likely to be adversely affected during this century by a combination of climate change–associated disturbances (e.g., flooding, drought, wildfire, insects, ocean acidification) and other global change drivers (e.g., land use change, pollution, fragmentation of natural systems, overexploitation of resources) (IPCC 2007). Most vulnerable to climate change are endangered and threatened species living within confined geographic ranges with limited ability to move or shift their range as the climate changes. Species migrating from their historical range to new areas as a result of climate change are also highly vulnerable because they are likely to be challenged by increased competition for habitat or food as they migrate (IPCC 2007).

The effects of climate change on ecosystem land management include both the geographic loss of habitat and the loss of habitat connectivity. Sea level rise is expected to cause an increase in seawater intrusion into California's coastal marshes and estuaries. Increased seawater intrusion will likely disrupt marsh and estuary ecosystems, especially at the higher projections of sea level rise. The loss of natural areas, in turn, will reduce opportunities to use ecological systems and functions within flood management systems.

The higher water temperatures resulting from climate change are likely to affect aquatic and terrestrial resources. Warmer temperatures can compromise the health and resilience of many existing aquatic and terrestrial species, and thus can make it more challenging for them to compete with nonnative species for survival. Of specific concern to Central Valley aquatic habitats, Chinook salmon and steelhead prefer temperatures of less than 64.4 to 68 degrees Fahrenheit (18–20 degrees Celsius) in mountain streams, although these anadromous fish may tolerate higher temperatures for short periods (Bennett 2005). Increased water temperatures could reduce the habitat suitability of California rivers for

these species. Impacts on terrestrial ecosystems have also been observed in North America. These impacts include changes to the timing and length of growing seasons and to the timing of species life cycles, as well as changes to primary production and species distributions and diversity (CEC 2009b).

Competition for habitat and food may intensify with climate change. For example, climate change is expected to reduce the suitable summer habitat of delta smelt, a federally listed endangered species, because waters in the lower Delta may be too saline and lack food while freshwater in the upper Delta may be too warm. Climate change could combine with nonclimate stressors, such as land use changes, wildfire, and agriculture, to cause habitat fragmentation at increasing rates, thus contributing to species extinction (USFWS 2009).

Effects on the Proposed Program

As described above for program conveyance and storage facilities, there remains substantial uncertainty about the extent to which climate change will adversely affect ecosystems; however, the conservation elements of the proposed program would act to make habitats and species populations more resilient to these changes. The CVFPP Conservation Strategy and mitigation measures in this PEIR would, at minimum, assure no net loss in the extent and quality of aquatic and terrestrial habitats important to various threatened and endangered species, such as riparian habitat important to Swainson's hawk and riparian brush rabbit. If the overall quality, volume, and/or extent of riparian habitat were increased, various benefits could be provided. For example, increased shading of waterways would assist in maintaining the lower water temperatures that are beneficial to many native fish species. Widening floodways and flood bypasses and constructing the new bypasses included in the CVFPP would increase the availability and extent of inundated floodplain habitat used by juvenile salmon and other special-status fish species. Increased availability of this habitat type could improve growth and survival rates for various fish populations, potentially offsetting the effects of degraded habitat conditions attributable to climate change.

The flood control benefits described above could also benefit species and ecosystems. For example, the proposed program would maintain or support the ability to use reservoir releases to control salinity; it would also prevent the adverse water quality effects associated with floodwaters that enter a developed area after a levee failure and then carry contaminants back to the waterway as floodwaters recede. Compared to existing conditions, the proposed program would at worst not exacerbate current and future impacts of climate change on ecosystems, and the program may provide a net benefit to the ability of species and habitats to withstand the adverse effects of climate change.