

Section 24

Other CEQA Considerations

This section addresses other California Environmental Quality Act (CEQA) considerations required as part of an Environmental Impact Report (EIR):

- ◆ Growth-inducing impacts
- ◆ Energy use and conservation
- ◆ Significant and unavoidable environmental effects
- ◆ Significant irreversible environmental changes

Cumulative impacts are addressed in Section 22, Cumulative Impact Assessment.

24.1 Growth-inducing Impacts

24.1.1 Introduction

CEQA requires that an EIR evaluate the growth-inducing impacts of a Proposed Project (section 21100(b)(5)). Growth-inducing impacts are described in section 15126.2(d) of the State CEQA Guidelines. Direct growth inducement would result, for example, if a project involves the construction of substantial new housing that would support increased population in a community or established substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises). This additional population would, in turn, increase demands for public utilities, public services, roads, and other infrastructure. Indirect growth inducement would result if a project stimulates economic activity that requires physical development or removes an obstacle to growth and development (e.g., increasing infrastructure capacity that would enable new or additional development).

Growth inducement may lead to significant direct, indirect, and cumulative environmental effects. For example, if substantial growth inducement occurs, it may result in significant environmental effects such as increased demand on 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. If the induced growth is consistent with or provided for by adopted land use plans and growth management policies for the area affected (e.g., city and county general plans, specific plans, transportation management plans), those plans may identify measures to ensure that these impacts are avoided or mitigated to the extent feasible.

24.1.2 Growth Inducement Potential of Proposed Project

This section discusses the ways in which the Proposed Project could induce growth. As described in Sections 2A, Proposed Project and Alternatives and 2B, Introduction to Resource Sections, the Delta Plan

1 does not direct the construction of specific projects, nor would projects be implemented under the direct
2 authority of the Delta Stewardship Council. As neither the Proposed Project nor any of the alternatives
3 involves the construction of new housing or commercial or industrial development, they would not
4 directly induce growth. However, the Proposed Project and alternatives could potentially induce growth
5 indirectly by removing obstacles to growth, such as by making water supplies more reliable and
6 encouraging development of local and regional water supplies.

7 In addition, some of the policies and recommendations in the Proposed Project would encourage State and
8 local agencies to continue implementation of certain specified projects and ongoing programs within
9 existing schedules or in an accelerated manner. Thus, the Proposed Project and alternatives could
10 indirectly lead to construction of new or modified infrastructure and facilities throughout California.

11 At this time, it is not known which agencies would implement the projects encouraged by the Delta Plan,
12 where they would be located, or how they would be designed and operated. Therefore, for the purposes of
13 this EIR, general project types are considered possible outcomes of implementation of the policies and
14 recommendations of the Proposed Project and alternatives in each of the following categories:

- 15 ♦ Creating a more reliable water supply
- 16 ♦ Restoring the Delta ecosystem
- 17 ♦ Improving water quality
- 18 ♦ Reducing flood risk in the Delta
- 19 ♦ Protecting and enhancing the unique cultural, recreational, natural resources, and agricultural
20 values of the California Delta as an evolving place

21 Each of these categories could remove potential obstacles to growth in communities within the Delta,
22 Delta watershed, and areas outside the Delta that use Delta water, as described below.

23 ***24.1.2.1 Reliable Water Supply***

24 The Proposed Project would promote development of reliable local and regional water supplies, including
25 water use efficiency; reducing reliance on Delta exports; and implementing programs that expand local
26 and regional water conveyance and storage. The Delta Plan seeks to improve water supply reliability by
27 encouraging various actions, which if taken could lead to completion, construction and/or operation of
28 projects that could provide a more reliable water supply.

29 A variety of factors influence new development or population growth in the Delta, Delta watershed, and
30 areas outside the Delta that use Delta water, including economic conditions of the region, adopted land
31 use plans and growth management policies, and the availability of adequate infrastructure. Economic
32 conditions are generally the primary factor. Although water service is just one of many factors affecting
33 the growth potential of a community, it is one of the critically important public services needed to support
34 urban development. Lack of a reliable water supply could constrain future development. Conversely,
35 improving reliability of water supplies serving an area could make that area more likely to develop in the
36 future. Development of local and regional water supply projects and associated conveyance facilities
37 could be accelerated due to implementation of the Proposed Project, and such projects could remove a
38 potential obstacle to growth within the Delta, Delta watershed, and areas outside the Delta that use Delta
39 water if the capacity of facilities were expanded more than would be needed to replace Delta water
40 supplies. Also, if in the future Delta water and ecosystem conditions improve under implementation of the
41 Proposed Project, the existing SWP and CVP conveyance facilities could be used in conjunction with the
42 new or modified local and regional water supplies and could be considered to be growth inducing.

1 The Davis-Woodland Water Supply Project EIR (City of Davis et al. 2007) was reviewed to assess the
2 types of effects that could result from installing a new water intake in the Sacramento River and
3 constructing pumping plants and conveyance and water treatment facilities. This project is analogous to
4 the types of water projects described above. In this EIR, the City found that implementing the project
5 would be growth inducing because it would result in continued population growth and development
6 beyond levels identified in local general plans. These effects would extend or increase the severity of
7 significant and unavoidable impacts to land use, agriculture, biological resources, air quality, noise,
8 transportation and traffic, and aesthetic resources. The EIR for the Carlsbad Precise Development Plan
9 and Desalination Plant Project (City of Carlsbad 2005), which illustrates some of the likely impacts of
10 ocean desalination plants, also was reviewed. For this project, the City found that implementation of the
11 project would not result in significant growth-inducing effects.

12 With regard to projects named in and encouraged by the Delta Plan, the California Department of Water
13 Resources (DWR) Surface Water Storage Investigation, which includes the North-of-the-Delta Offstream
14 Storage Investigation (aka Sites Reservoir), Los Vaqueros Reservoir Expansion Project, and the Upper
15 San Joaquin River Basin Storage Investigation Plan (aka Temperance Flat Reservoir) would provide
16 additional reliable water sources to the East Bay and Central Valley, thereby indirectly inducing growth in
17 these areas. The Los Vaqueros Reservoir Expansion Project has undergone project-specific environmental
18 review in an EIS/EIR; the other two projects have not undergone environmental review. The Los
19 Vaqueros EIS/EIR provides specific information on the impacts of that project; however, it also provides
20 analogous information about the types of impacts expected from construction and operation of these other
21 two projects, which are similar. In addition, the project-specific EIR for another surface storage project
22 (not named in the Delta Plan)—the Calaveras Dam Replacement Project—also provides analogous
23 information.

24 These individual water supply projects encouraged by the Delta Plan may also create temporary¹ and
25 sustained employment opportunities due to construction and operation of water supply facilities.
26 According to the Los Vaqueros Reservoir Expansion Project Draft EIS/EIR (Reclamation et al. 2009),
27 additional water provided by the reservoir expansion could reduce the amount of supplemental water or
28 the level of demand reduction necessary in Contra Costa Water District's service area during a drought,
29 thereby removing water supply reliability as an obstacle to growth. The Calaveras Dam Replacement
30 Project Final EIR (SFPUC 2011) identified that by improving the reliability of the water supply and water
31 system (as one potential obstacle to growth within the San Francisco Public Utilities Commission
32 [SFPUC] service area) and providing and assisting in development of additional water supply sources,
33 such as recycled water and groundwater projects as well as promotion of more efficient use of water
34 through conservation measures, the project would have an indirect growth-inducing effect.

35 As described above for the Proposed Project, and as concluded in these EIRs for named projects and
36 projects similar to those encouraged by the Delta Plan, implementing the reliable water supply objectives
37 of the Proposed Project would likely result in an indirect growth-inducing effect. Environmental effects
38 resulting from this indirectly induced growth are described in Section 24.1.4.

39 ***24.1.2.2 Delta Ecosystem Restoration***

40 The Proposed Project would promote development of instream flow criteria and flow objectives that
41 establish a more natural flow regime in the Delta and upstream tributaries, provide for large-scale
42 ecosystem restoration, and reduce the adverse impacts of nonnative species and stressors on native
43 species and natural communities in the Delta. Creating a more natural flow regime in the Delta would
44 occur only if the State Water Resources Control Board (SWRCB) changes the terms and conditions in
45 water rights permits for water users that use water directly from or that is conveyed through the Delta,

¹ As other EIRs cited below have found, temporary construction employment generally is not growth-inducing.

1 and/or develops new water quality objectives for the Delta and Delta watershed. At this point in time, it is
2 very difficult to estimate how changes in Delta flow criteria would affect decision making by other local,
3 State and federal agencies. The Delta Plan seeks to improve the Delta ecosystem by encouraging a range
4 of actions and projects, which if taken could lead to completion, construction and/or operation of projects
5 that could improve the Delta ecosystem.

6 Under the Proposed Project, ecosystem restoration projects would result in short-term employment
7 opportunities for construction and operation; however, the work would be largely temporary and seasonal.
8 Because the named projects focus mainly on restoring habitat and adjusting the flow regime in the Delta,
9 their project features would not lead to growth or remove potential obstacles to future development in the
10 Delta, Delta watershed, or areas outside the Delta that use Delta water. For example, the Suisun Marsh
11 Habitat Management, Preservation, and Restoration Plan EIS/EIR (Reclamation et al. 2010), which
12 addressed ecosystem restoration in the Suisun Marsh, concluded that the project would not result in a
13 growth-inducing effect, as the vast majority of workers needed for both construction and operation of the
14 project would originate from the local area, the temporary nature of construction employment would not
15 require permanent housing or accommodations, permanent job creation would be limited, and no
16 significant housing or infrastructure demand would result from recreational expansion or job creation.

17 Similarly, the EIR for the North Delta Flood Control and Ecosystem Restoration Project (DWR 2010), a
18 named project in the Proposed Project, concluded that implementation of the project would not result in
19 growth-inducing effects because anticipated temporary increases in employment represented a very small
20 percentage of total regional employment, because most construction workers would be hired from the
21 local labor pool, and because the project did not propose floodplain modifications substantial enough to
22 change the 100-year-floodplain designation and open additional areas to future growth.

23 As described above for the Proposed Project, and as noted in EIRs for named projects and projects similar
24 to those encouraged by the Delta Plan, implementing the ecosystem restoration objectives of the Proposed
25 Project would likely not result in growth-inducing effects.

26 ***24.1.2.3 Water Quality Improvement***

27 The Proposed Project recommends implementation of an aggressive schedule for development of water
28 quality objectives, Total Maximum Daily Limits for possible contaminants, and participation by Delta
29 watershed water users or dischargers in programs to improve water quality. In addition, the Proposed
30 Project would include recommendations to the SWRCB, DWR, and the California Department of Public
31 Health to develop aggressive schedules for the completion of ongoing studies to improve drinking water
32 quality.

33 The Proposed Project would encourage implementation of a full range of actions to improve drinking
34 water quality. If successfully implemented, the Proposed Project could increase the amount of potable
35 water available to communities experiencing poor water quality, thereby removing water quality as a
36 potential obstacle to future development in such communities.

37 Individual water quality improvement projects could also provide both temporary and sustained
38 employment opportunities. The Davis-Woodland Water Supply Project EIR (City of Davis et al. 2007)
39 was reviewed to assess the types of effects that could result from construction and operation of water
40 quality improvement projects, such as water, wastewater, and sewage treatment plants. This project is
41 analogous to the types of water quality improvement project described above. In this EIR, the City found
42 that implementing the project would result in continued population growth and development beyond
43 levels identified in local general plans as well as new growth-inducing effects. These effects would extend
44 or increase the severity of significant and unavoidable impacts to land use, agriculture, biological
45 resources, air quality, noise, transportation and traffic, and aesthetic resources.

1 The Delta Plan encourages implementation of the North Bay Aqueduct Alternative Intake Project and the
2 Central Valley Salinity Alternatives for Long-Term Sustainability (CV-SALTS) effort. The CV-SALTS
3 project would result in the construction of new wastewater treatment facilities. The new North Bay
4 Alternative Intake structure would be located on the Sacramento River in a rural area of Sacramento or
5 Yolo County and the new pipeline would extend from the new intake structure to the existing North Bay
6 Regional Water Treatment Plant. This diversion/intake structure and water conveyance pipeline are
7 similar to the facilities associated with the Davis-Woodland Water Supply Project, which while not
8 named in the Delta Plan, nevertheless provides analogous information. In the EIR for this project (City of
9 Davis et al. 2007), the City found that implementing the project would be growth inducing because it
10 would result in continued population growth and development beyond levels identified in local general
11 plans. These effects would extend or increase the severity of significant and unavoidable impacts to land
12 use, agriculture, biological resources, air quality, noise, transportation and traffic, and aesthetic resources.

13 Actions encouraged by the Proposed Project to improve water quality also could include management and
14 treatment of agricultural runoff. The EIS/EIR for the Grasslands Bypass Project (Reclamation and
15 San Luis & Delta-Mendota Water Authority 2008) illustrates some of the types of potential impacts
16 associated with actions to improve the quality of agricultural drainage water. This EIR found that the
17 project would not result in growth-inducing effects, as the project would not stimulate the economy to a
18 significant level; agricultural land uses were unlikely to convert to urban uses due to the project's
19 consistency with county policies to preserve agricultural land, the Williamson Act program, and the
20 distance of the project from cities experiencing significant urbanization; and additional potable water
21 would not be made available to serve municipal and industrial development.

22 As described above for the Proposed Project, and as noted in these EIRs for projects analogous to those
23 named in or encouraged by the Delta Plan, implementing the improved water quality objectives of the
24 Proposed Project may result in an indirect growth-inducing effect depending on the location and specific
25 characteristics of the water quality projects encouraged by the Delta Plan. Environmental effects resulting
26 from this indirectly induced growth are described in Section 24.1.4.

27 **24.1.2.4 Flood Risk Reduction**

28 The Proposed Project includes policies to protect floodways and critical floodplains in the Delta from
29 encroachment, promote stringent levee design standards for rural residential areas in the Delta to provide
30 protection for the 200-year flood event, and prioritize funding for levee construction. The Proposed
31 Project also includes recommendations to emphasize dredging of channels and stockpiling of rock for
32 minor and major levee repairs, emphasize mandatory Delta-wide emergency preparation and emergency
33 response programs, and modify flood control management procedures for reservoirs upstream of the Delta
34 to reduce potential Delta flooding.

35 The number and location of all potential projects that would be implemented is not known at this time.
36 One possible project, however, is known to some degree and is named in the Delta Plan, specifically the
37 Sacramento River Deep Water Ship Channel and Stockton Deep Water Ship Channel Dredging (the
38 United States Army Corps of Engineer's *Delta Dredged Sediment Long-Term Management Strategy*
39 included in Appendix C, Attachment C-7 of this EIR). The Proposed Project also names DWR's *A*
40 *Framework for Department of Water Resources Investments in Delta Integrated Flood Management*,
41 which could, upon completion, provide guidance on the prioritization of flood protection investments.

42 These potential projects focus mainly on maintaining, enhancing, and improving existing levees, thereby
43 providing improved flood protection in the Delta. However, other policies in the Proposed Project restrict
44 expansion of urbanized areas within the Delta beyond currently established spheres of influence, and
45 remaining portions of the Delta that would be afforded improved flood protection are primarily
46 designated for ecosystem restoration or long-term agricultural use. Furthermore, the Proposed Project
47 would encourage expansion, rather than reduction, of the amount of floodplain area upstream from the

1 Delta. None of the identified project features would remove potential obstacles to future development in
2 the Delta, Delta watershed, or areas outside the Delta that use Delta water.

3 Growth-inducing impacts were evaluated in the EIR for the North Delta Flood Control and Ecosystem
4 Restoration Project (DWR 2010), a named project that provides an assessment of impacts that are
5 analogous to the levee construction activities encouraged by the Delta Plan. For this project, the lead
6 agency concluded that implementation of the project would not result in growth-inducing effects because
7 anticipated temporary increases in employment represented a very small percentage of total regional
8 employment, because most construction workers would be hired from the local labor pool, and because
9 the project did not propose floodplain modifications substantial enough to change the 100-year-floodplain
10 designation and open additional areas to future growth.

11 The Delta Plan also encourages implementation of the Sacramento River Deep Water Ship Channel and
12 Stockton Deep Water Ship Channel Dredging Project. The Draft Supplemental EIS/Subsequent EIR for
13 the Sacramento River Deep Water Ship Channel (USACE and Port of West Sacramento 2011), a project
14 that is both encouraged by the Proposed Project and serves as an example of dredging projects, analyzed
15 proposed dredging activities and concluded that no growth-inducing effect would result, as the project
16 would not increase cargo throughput to port, no new buildings or homes would be constructed, and no
17 new permanent employment opportunities would be generated, although some temporary workers may be
18 needed to support construction.

19 As described above for the Proposed Project and as noted in these EIRs for projects analogous to those
20 named in or encouraged by the Delta Plan, implementing the flood risk reduction objectives of the
21 Proposed Project would likely not result in growth-inducing effects.

22 ***24.1.2.5 Protection and Enhancement of Delta as an Evolving Place***

23 The Proposed Project endorses land use and resource management actions to protect the Delta's natural,
24 agricultural, and cultural heritage. These include development of Safe Harbor agreements throughout the
25 Delta to contribute to the recovery of threatened and endangered species, designation of portions of the
26 Delta as a National Heritage Area, establishing recreational gateways to the Delta, and expanding
27 recreational amenities.

28 The number and location of all potential projects that could be implemented is not currently known.
29 However, three possible projects are known to some degree and are named in the Delta Plan, specifically,
30 new State Parks at Barker Slough, at Elkhorn Basin, and in the southern Delta.

31 These types of projects would result in short-term employment opportunities for construction and
32 operation; however, the work would be largely temporary and seasonal. Because of the limited number
33 and type of new jobs that would be generated and the temporary and seasonal nature of those jobs, it is
34 anticipated that the new jobs would be filled using the existing local employment pool. Existing available
35 housing in the region would accommodate workers who relocate from outside the area, if needed. New
36 permanent jobs would not be created.

37 While the specific impacts of many of these projects, if they go forward, are yet to be determined,
38 projects recently evaluated under CEQA with characteristics similar to those described above for
39 protection and enhancement of the Delta as an evolving place provide perspective on the types of impacts
40 that might result. The programmatic EIR for the development of San Luis Rey River Park in northern
41 San Diego County (San Diego County Department of Parks and Recreation 2008), a project analogous to
42 those encouraged in the Delta, found that construction of park facilities would not result in growth-
43 inducing effects, as the presence of a park is likely only one among many factors in a residential location
44 decision; no zoning or land use designation changes that could encourage development are required to
45 construct park facilities; the economic stimulus of developing a park is considered negligible; land

1 acquired by a public agency for park purposes would not be used for development of any other uses; and
2 constructing a park would not encourage infrastructure elements, such as roads, water, sewer, and other
3 services or utilities, in areas that are not currently served by such facilities.

4 Similarly, the final EIR for the Bidwell–Sacramento River State Park Habitat Restoration and Outdoor
5 Recreation Facilities Development Project (The Nature Conservancy and California Department of Parks
6 and Recreation 2008), which is illustrative of some of the potential growth-inducing effects associated
7 with park development and recreational facilities, found that no significant growth-inducing effect would
8 occur as a result of enhanced recreational opportunities, as the number and type of new jobs that would be
9 generated is limited, the jobs would be temporary, new jobs would be filled using the existing local
10 employment pool, and existing available housing would accommodate workers who relocate from outside
11 the area.

12 As described above for the Proposed Project and as noted in these EIRs for projects analogous to those
13 named in or encouraged by the Delta Plan, implementing the Delta enhancement objectives of the
14 Proposed Project would likely not result in growth-inducing effects.

15 **24.1.3 Growth-inducing Impacts of Alternatives**

16 Drawing upon the analysis presented above, the following sections describe the growth-inducing impacts
17 of the alternatives.

18 ***24.1.3.1 No Project Alternative***

19 As described in Section 2A, Proposed Project and Alternatives, the No Project Alternative is based on the
20 continuation of existing plans and policies and the continued operation of existing facilities into the future
21 and permitted and funded projects. Several ongoing projects have been identified as part of the No Project
22 Alternative. The list of projects included in the No Project Alternative is presented in Table 2-2.

23 The No Project Alternative includes various water supply projects and one ecosystem enhancement
24 project, as described in Section 2A, Proposed Project and Alternatives. None of the projects identified
25 within the No Project Alternative would directly induce growth, as none involve the construction of
26 housing or commercial or industrial development. However, indirect growth inducement could occur as a
27 result of planned water supply and water quality improvement projects identified in the No Project
28 Alternative, although these projects would not be endorsed or encouraged in the absence of an adopted
29 Delta Plan.

30 ***24.1.3.2 Alternative 1A***

31 Under Alternative 1A, the construction and operation of surface water projects (water intakes, treatment
32 and conveyance facilities, and reservoirs) would be the same as under the Proposed Project. As described
33 in Section 2A, Proposed Project and Alternatives, there would be fewer groundwater projects (wells,
34 wellhead treatment, conveyance facilities, ocean desalination projects, recycled wastewater and
35 stormwater projects (treatment and conveyance facilities), and water transfers compared to the Proposed
36 Project. Water use efficiency and conservation programs also would be reduced compared to the
37 Proposed Project.

38 Projects to restore the Delta ecosystem would be reduced relative to the Proposed Project, and the
39 implementation of flow objectives that could lead to a more natural flow regime in the Delta would not be
40 accelerated. Ecosystem stressor management activities and invasive species management (including
41 removal of invasive vegetation) would be the same as described for the Proposed Project.

42 Projects and actions to improve water quality would be the same as under the Proposed Project. Flood
43 risk reduction projects also would be the same as under the Proposed Project, except that there would be

1 less emphasis on levee maintenance and modification of levees that protect agricultural land, which could
2 result in an overall reduction in levee improvement activities, but more emphasis on maintenance and
3 modification of levees that protect water supply corridors, which could remove an obstacle to growth.
4 Projects to protect and enhance the Delta as an evolving place would be the same as for the Proposed
5 Project.

6 No direct growth inducement would occur with implementation of Alternative 1A, as it does not involve
7 the construction of housing or commercial or industrial development. Similar to the Proposed Project,
8 indirect growth inducement could occur under Alternative 1A as a result of implementation of water
9 supply and water quality improvement projects that may be endorsed or encouraged as a result of
10 implementing Alternative 1A. Alternative 1A, like the Proposed Project, would result in increased water
11 supply reliability and the associated growth inducement related to increased water supply reliability for
12 development. Alternative 1A would change Policy WR P1's water conservation, efficiency and related
13 measures from regulatory provisions to recommendations. Compared to the Proposed Project, that change
14 would decrease the pressure to develop local water supplies. This alternative involves increased pumping
15 of water from the Delta and its watershed to areas that receive Delta water. In turn, it would involve
16 construction and operation of fewer projects aimed at promoting local water supplies (e.g., new or
17 expanded reservoirs, groundwater storage) and fewer construction projects aimed at promoting
18 conservation and efficiency in areas that receive Delta water compared to the Proposed Project.
19 Implementation of water supply and water quality projects would generally be reduced under this
20 alternative, thereby reducing potential growth-inducing effects associated with the economic activity
21 related to construction activities.

22 **24.1.3.3 Alternative 1B**

23 Under Alternative 1B, the construction and operation of surface water projects (water intakes, treatment
24 and conveyance facilities, and reservoirs) would be the same as under the Proposed Project. As described
25 in Section 2A, Proposed Project and Alternatives, there would be fewer groundwater projects (wells,
26 wellhead treatment, conveyance facilities), recycled wastewater and stormwater projects (treatment and
27 conveyance facilities), and water transfers compared with the Proposed Project. Water use efficiency and
28 conservation programs also would be reduced relative to the Proposed Project. There would be no ocean
29 desalination projects.

30 The extent of projects to restore the Delta ecosystem would be reduced compared to the Proposed Project
31 and would not emphasize restoration of floodplains in the lower San Joaquin River. Implementation of
32 flow objectives would not be accelerated or include public trust considerations. Ecosystem stressor
33 management activities and invasive species management (including removal of invasive vegetation)
34 would be increased compared to the Proposed Project, but a variance to the USACE Levee Vegetation
35 Policy would not be requested. In addition, Alternative 1B would not require conformance with the
36 habitat types and elevation maps presented in the Conservation Strategy for Restoration of the
37 Sacramento-San Joaquin Delta Ecological Management Zone and the Sacramento and San Joaquin Valley
38 Regions (DFG 2011).

39 Water quality improvement projects, including water treatment plants, conveyance facilities, and wells
40 and wellhead treatment facilities, would be emphasized less compared to the Proposed Project, but greater
41 emphasis would be placed on the construction and operation of wastewater treatment and recycle facilities
42 and municipal stormwater treatment facilities.

43 Flood risk reduction would place greater emphasis on levee modification/maintenance and dredging than
44 under the Proposed Project, but there would be no setback levees or subsidence reversal projects.
45 Floodplain expansion projects would be fewer and less extensive, and use of reservoir reoperation would
46 be reduced. Actions to protect and enhance the Delta as an evolving place would be consistent with the
47 Economic Sustainability Plan, but locating new parks in the Delta would not be encouraged.

1 No direct growth inducement would occur with implementation of Alternative 1B, as it does not involve
2 the construction of housing or commercial or industrial development. Similar to the Proposed Project,
3 indirect growth inducement could occur under Alternative 1B as a result of implementation of water
4 supply and water quality improvement projects that may be endorsed or encouraged as a result of
5 implementing Alternative 1B. Alternative 1B would change Policy WR P1's water conservation,
6 efficiency and related measures from regulatory provisions to recommendations. Compared to the
7 Proposed Project, that change would decrease the pressure to develop local water supplies.

8 Alternative 1B, like the Proposed Project, would result in increased water supply reliability and the
9 associated growth inducement related to increased water supply reliability for development. Like
10 Alternative 1A, this alternative involves increased pumping of water from the Delta and its watershed to
11 areas that receive Delta water. In turn, it would involve construction and operation of fewer projects
12 aimed at promoting local water supplies (e.g., new or expanded reservoirs, groundwater storage) and
13 fewer construction projects aimed at promoting conservation and efficiency in areas that receive Delta
14 water compared to the Proposed Project. The recommendations in Alternative 1B vary from those in
15 Alternative 1A in certain respects, however. For example, Alternative 1B places more emphasis than
16 Alternative 1A on reducing non-native species in the Delta, but less emphasis on reducing possible water
17 quality contaminants entering the Delta. Implementation of water supply and water quality projects would
18 generally be further reduced under this alternative, thereby further reducing potential growth-inducing
19 effects associated with the economic activity related to construction activities.

20 **24.1.3.4 Alternative 2**

21 As described in Section 2A, Proposed Project and Alternatives, Alternative 2 would place greater
22 emphasis on groundwater, ocean desalination, water transfers, water use efficiency and conservation and
23 recycled water projects and less emphasis on surface water projects. The surface storage reservoirs
24 considered under the DWR Surface Water Storage Investigation would not be encouraged; instead,
25 surface storage in the Tulare Basin would be emphasized. Ecosystem restoration projects similar to but
26 less extensive than those encouraged by the Proposed Project would be emphasized without the
27 requirement to conform to the Ecosystem Restoration Program habitat types and elevation map.
28 Alternative 2 would emphasize the development of flow objectives that take into consideration updated
29 flow criteria that support a more natural flow regime, water rights, and greater protection of public trust
30 resources.

31 Actions to improve water quality would be similar to or greater than those under the Proposed Project,
32 especially the treatment of wastewater and agricultural runoff. Actions to reduce flood risk under
33 Alternative 2 would emphasize floodplain expansion and reservoir reoperation rather than levee
34 construction and modification. The stockpiling of rock and encouragement of subsidence reversal projects
35 would be the same as under the Proposed Project, as would actions to protect and enhance the Delta as an
36 evolving place.

37 No direct growth inducement would occur with implementation of Alternative 2, as it does not involve
38 the construction of housing or commercial or industrial development. Similar to the Proposed Project,
39 indirect growth inducement could occur under Alternative 2 as a result of implementation of water supply
40 and water quality improvement projects that may be endorsed or encouraged as a result of implementing
41 Alternative 2. This alternative involves decreased pumping of water from the Delta and its watershed to
42 areas that receive Delta water, decreased construction and related environmental impacts of water storage
43 projects in California, and increased Delta ecosystem restoration. Compared to the Proposed Project,
44 Alternative 2 recommends that Delta exports be sharply curtailed (to a maximum of 3 million acre-feet
45 per year), decreases emphasis on storage (other than the possible construction of a reservoir on the Tulare
46 Lake Bed), and increases emphasis on ecosystem restoration generally by removing levees and thereby
47 expanding floodplains, as opposed to constructing discrete ecosystem projects. The likelihood of

1 accelerated implementation of water supply and water quality improvement projects to replace Delta
2 exports would generally be increased under this alternative, thereby increasing potential growth-inducing
3 effects associated with the economic activity related to construction activities.

4 Similar to conditions under the Proposed Project, development of local and regional water supply projects
5 and associated conveyance facilities could be accelerated due to implementation of the Proposed Project,
6 and such projects could remove a potential obstacle to growth within the Delta, Delta watershed, and
7 areas outside the Delta that use Delta water if the capacity of facilities were expanded more than would be
8 needed to replace Delta water supplies. Also, if in the future Delta water and ecosystem conditions
9 improve under implementation of the Proposed Project, the existing SWP and CVP conveyance facilities
10 could be used in conjunction with the new or modified local and regional water supplies and could be
11 considered to be growth inducing.

12 **24.1.3.5 Alternative 3**

13 As described in Section 2A, Proposed Project and Alternatives, the water supply reliability projects and
14 actions under Alternative 3 would be similar to those of the Proposed Project, although there would be
15 less emphasis on surface water projects. Ecosystem restoration (floodplain restoration, riparian
16 restoration, tidal marsh restoration, and floodplain expansion) would be reduced relative to the Proposed
17 Project, and restoration on publicly owned lands, especially in Suisun Marsh and the Yolo Bypass, would
18 be emphasized. There would be more ecosystem stressor management actions (e.g., programs for water
19 quality, water flows) and more management for nonnative invasive species. Water quality improvements
20 would be the same as under the Proposed Project. Actions under Alternative 3 to reduce flood risk would
21 not include setback levees or subsidence reversal but would result in greater levee
22 modification/maintenance and dredging relative to the Proposed Project. Reservoir reoperation and rock
23 stockpiling would be the same as under the Proposed Project, as would activities to protect and enhance
24 the Delta as an evolving place.

25 No direct growth inducement would occur with implementation of Alternative 3, as it does not involve
26 the construction of housing or commercial or industrial development. Similar to the Proposed Project,
27 indirect growth inducement could occur under Alternative 3 as a result of implementation of water supply
28 and water quality improvement projects that may be endorsed or encouraged as a result of implementing
29 Alternative 3. This alternative involves increased protection of Delta agricultural lands. Compared to the
30 Proposed Project, Alternative 3 would seek to reduce negative impacts to agricultural lands in the Delta
31 by, among other things, deemphasizing Delta ecosystem restoration on established farmland and set back
32 levees and focusing levee construction on the protection of agricultural viability as opposed to new
33 development. The likelihood of accelerated implementation of water supply and water quality
34 improvement projects would generally be increased under this alternative, thereby increasing potential
35 growth-inducing effects associated with the economic activity related to construction activities.

36 Similar to conditions under the Proposed Project, development of local and regional water supply projects
37 and associated conveyance facilities could be accelerated due to implementation of the Proposed Project,
38 and such projects could remove a potential obstacle to growth within the Delta, Delta watershed, and
39 areas outside the Delta that use Delta water if the capacity of facilities were expanded more than would be
40 needed to replace Delta water supplies. Also, if in the future Delta water and ecosystem conditions
41 improve under implementation of the Proposed Project, the existing SWP and CVP conveyance facilities
42 could be used in conjunction with the new or modified local and regional water supplies and could be
43 considered to be growth inducing.

24.1.4 Environmental Effects of Induced Growth

Growth indirectly induced by implementation of the Proposed Project and alternatives also may, in turn, result in further direct, indirect, and cumulative environmental effects. The effects of population and employment growth have been identified and addressed in the EIRs for general plans, area plans, and specific plans adopted by jurisdictions in the Delta, Delta watershed, and areas outside the Delta that use Delta water. Some identified indirect effects of growth are significant and unavoidable; others are significant but can be mitigated to a level less than significant.

Significant impacts that may result from population growth in the Delta, Delta watershed, and areas outside the Delta that use Delta water would include the following: traffic congestion, air pollution and greenhouse gas emissions, traffic noise, construction noise, increased demand for public schools and other public services, loss of recreational opportunities and impacts on visual quality resulting from the loss of open space, cumulative effects due to overutilization of parks, loss of wildlife habitat and wetlands, impacts on other biological resources, impacts on cultural resources, increased flooding potential, increased urban runoff pollutants, seismic hazards, failure to meet housing demand for projected population growth, exposure of new development to contaminated soil or groundwater, insufficient water supply, insufficient wastewater disposal capacity, loss of agricultural resources, land use conflicts, conflicts with existing land use plans or policies, and changes in density, scale, and character of an area.

Development and growth in the Delta and Suisun Marsh, Delta watershed, and areas outside of the Delta that use Delta water are influenced by local, regional, and national economic conditions and controlled by cities and counties through their land use authority. These agencies have adopted general plans consistent with State law that provide the overall framework for growth in their respective jurisdictions. The Council has no authority to permit or condition development. Individual agencies' general plans and associated environmental documents contain actions, limitations, and mitigation measures that would be implemented in the individual jurisdictions with local development project or program approvals that qualify as covered actions under the Delta Reform Act. These projects would be subject to environmental review and mitigation in accordance with CEQA. Such review and mitigation will likely incorporate mitigation measures identified within the environmental resource sections of this EIR capable of reducing the environmental impacts of growth inducement.

24.2 Energy Use and Conservation

To ensure that energy implications are considered in project decisions, CEQA requires that EIRs include a discussion of the potential energy impacts of proposed projects, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy (see Public Resources Code section 21100(b)(3)). Appendix F of the State CEQA Guidelines identifies possible topics and suggested conservation measures for discussion in an EIR. Accordingly, Appendix F is used as guidance for the following discussion of the Delta Plan.

24.2.1 Project Description

Because this is a program-level EIR, detailed lists of equipment associated with construction and operation of specific projects or actions that may be implemented under the Proposed Project are not available. Likewise, energy efficiencies of individual projects that may be encouraged by the Proposed Project cannot be identified because information about the equipment, design features, and embodied energy in materials that would be used for construction and operation also is not available. The types of activities and equipment that likely would be used under the Proposed Project are described in Section 2A, Proposed Project and Alternatives, and in Section 24.2.3, Environmental Impacts. The projected increase in vehicular traffic is described in Section 19, Transportation, Traffic, and Circulation.

24.2.2 Environmental Setting

The energy delivered to the Delta area is described in Section 20, Utilities and Service Systems, and summarized below.

Within the Delta, the Sacramento Municipal Utility District (SMUD) and Pacific Gas and Electric Company (PG&E) are the primary electrical and natural gas providers. Outside the Delta, the primary providers of electricity and natural gas, in addition to SMUD and PG&E, are Southern California Edison (SCE) and San Diego Gas & Electric Company (SDG&E). Several municipal electric utilities also provide retail power to customers outside the Delta.

California has a Renewable Portfolio Standard (RPS) requirement that was established in 2002 under Senate Bill 1078. Provisions of this Senate bill were accelerated in 2006 under Senate Bill 107 and expanded in 2011 under Senate Bill 2. The RPS requires investor-owned utilities and electric service providers to increase procurement from eligible renewable energy resources to 33 percent of total procurement by 2020, with an interim goal of 20 percent by 2010.

SMUD has aggressive renewable energy targets that are currently being met through its RPS and Greenergy programs. SMUD's renewable supply goal was 23 percent (20 percent RPS, 3 percent Greenergy) by 2010 and is now 37 percent (33 percent RPS, 4 percent Greenergy) by 2020. SMUD achieved its 2010 goal of 23 percent, including the RPS target of 20 percent, in 2010 (SMUD 2011a, 2011b).

PG&E has the same RPS target for 2020, but the implementation schedule and current percentage of delivered renewable energy are different from those of SMUD; in 2010, about 16 percent of PG&E's energy was from renewable supplies. The same is true for SCE and SDG&E; in 2010, about 19 percent of SCE's energy and about 12 percent of SDG&E's energy was from renewable supplies (CPUC 2011). All three energy providers have recently solicited and signed contracts to deliver more renewable energy in the future.

Electrical equipment and natural gas and fossil fuel combustion must meet certain building and appliance/equipment specifications that will evolve over time.

Applicable energy conservation regulations that will provide future benefits during project construction and operation under the Proposed Project include the RPS program for renewable energy development and vehicular energy efficiency requirements for light-duty vehicles, medium-duty vehicles, and heavy-duty vehicles. Several of these policies and recommendations could substantially affect energy consumption and conservation associated with construction and operation of the Proposed Project, as described in Section 24.2.3, Environmental Impacts.

Energy costs and supplies over the projected lifetime of the Delta Plan are unknown; however, energy efficiency and the use of renewable energy sources are expected to increase over the same period and could potentially offset future costs and limitations associated with fossil fuel-based energy supplies.

24.2.3 Environmental Impacts

The Delta Plan includes policies and recommendations that address the following categories:

- ◆ Reliable water supply
- ◆ Delta ecosystem restoration
- ◆ Water quality improvement
- ◆ Flood risk reduction
- ◆ Protection and enhancement of Delta as an evolving place

1 **24.2.3.1 Reliable Water Supply**

2 Implementation of the Delta Plan could encourage water supply projects and their features, including
3 surface water storage facilities, groundwater storage facilities, water intakes, pumping plants, pipelines
4 and tunnels, canals, regulating reservoirs, water transfers, water use efficiency program implementation,
5 reservoir (Central Valley Project/State Water Project) operation, ocean desalination plants, and
6 hydroelectric generation, as described in Section 2A, Proposed Project and Alternatives.

7 **24.2.3.1.1 Construction**

8 Constructing treatment plants, surface water and groundwater storage facilities, conveyance facilities
9 (intakes, canals, pipelines, tunnels, siphons, and pumping plants), and groundwater wells could require
10 the use of heavy equipment, such as excavators, graders, scrapers, bulldozers, backhoes, and concrete
11 mixing and pumping trucks, which would result in the consumption of energy in the form of fossil fuel, as
12 well as energy needed to extract, process, transport, and dispose of nonrenewable natural resources used
13 in the construction process, such as gravel, petroleum products, steel, and other materials.

14 Fossil fuel combustion (direct and indirect/electrical) would be used to power construction equipment,
15 and the types and quantities used would depend on the equipment technology and efficiency. Worker and
16 vendor trips, as well as material transport, would result in transportation-based energy use. Area sources
17 include on-site equipment fuel combustion (from on-road and off-road equipment) and electricity use.

18 It is unknown whether energy-efficient equipment, design measures (including siting and transit), and
19 local/renewable materials would be included in all projects under the Proposed Project before mitigation.
20 Implementation of vehicle efficiency measures and RPS requirements would result in lower construction-
21 related energy use as projects named or encouraged by the Proposed Project are constructed in the future.

22 **24.2.3.1.2 Operation**

23 Projects encouraged by the Delta Plan could involve the operation of storage facilities in the Delta
24 watershed and in areas outside of the Delta that use Delta water. Operation of these facilities (such as
25 those considered under DWR's Surface Water Storage Investigation) could potentially result in
26 consumption of energy resources, such as fossil fuels combusted for transportation of goods and people,
27 and building and equipment use. Both direct combustion of fuels (i.e., gasoline, diesel, and natural gas)
28 and indirect fuel consumption used for electricity generation would result from operation of projects
29 under the Proposed Project. Implementation of vehicle efficiency measures and the RPS program would
30 result in lower construction-related energy use as projects named or encouraged by the Proposed Project
31 operate in the future.

32 Operation of projects named or encouraged by the Proposed Project could result in hydroelectric power
33 generation, which is a renewable energy source. Increasing use of a renewable energy source would be
34 consistent with the State's RPS goals. It also would reduce energy costs over the project's lifetime if
35 some of the energy generated were used for operation of named or encouraged projects. Hydropower
36 production would displace some amount of fossil fuel combustion either in California or out of state.

37 **24.2.3.2 Delta Ecosystem Restoration**

38 Implementation of the Delta Plan could include floodplain restoration, riparian restoration, wetland
39 restoration, stressor management (e.g., continuation of ongoing programs managing pesticide runoff,
40 water quality, water flows), invasive species management, and levee modifications and associated
41 infrastructure (e.g., levee removal/degradation, pumping facilities, weirs/gates, dredging) to accomplish
42 Delta ecosystem restoration objectives, as described in Section 2A, Proposed Project and Alternatives.

1 **24.2.3.2.1 Construction**

2 The actions and projects that could be implemented as part of efforts to restore the Delta ecosystem would
3 result in the consumption of energy in the form of fossil fuel and energy needed to extract, process,
4 transport, and dispose of nonrenewable natural resources used in the construction process, such as gravel,
5 petroleum products, steel, and other materials, as described in Section 24.2.3.1.1.

6 **24.2.3.2.2 Operation**

7 Operation of the projects related to ecosystem restoration would also result in consumption of energy
8 resources, such as fossil fuels combusted for transportation of goods and people, and structures and
9 equipment use, as described in Section 24.2.3.1.2.

10 Most sites likely to be restored under the Proposed Project are currently in agricultural use. Modern
11 agricultural practices are energy intensive because of the need for fossil fuel combustion from equipment
12 use, worker and material transport, storage, and movement of produced goods. Energy is also used in the
13 production and use of agricultural fertilizers, pesticides/herbicides, and animal feed. Operation of
14 ecosystem restoration sites would displace most of these activities. Therefore, if the ecosystem restoration
15 projects encouraged by the Delta Plan displace agricultural uses, overall energy use would decrease.

16 **24.2.3.3 Water Quality Improvement**

17 Implementation of the Delta Plan could accelerate planned construction and operation of water treatment
18 plants, pipelines, wastewater treatment plants, stormwater treatment facilities, and agricultural runoff
19 treatment facilities to achieve Delta Plan water quality objectives, as described in Section 2A, Proposed
20 Project and Alternatives.

21 **24.2.3.3.1 Construction**

22 The actions and projects that could be implemented as part of efforts to improve water quality would
23 result in the consumption of energy in the form of fossil fuel and energy needed to extract, process,
24 transport, and dispose of nonrenewable natural resources used in the construction process, such as gravel,
25 petroleum products, steel, and other materials, as described in Section 24.2.3.1.1.

26 **24.2.3.3.2 Operation**

27 Operation of the projects related to improving water quality would also result in consumption of energy
28 resources, such as fossil fuels combusted for transportation of goods and people, and building and
29 equipment use, as described in Section 24.2.3.1.2.

30 Operation of these projects would also result in use of energy used to process, transport, and dispose of
31 chemicals used in the water and wastewater treatment processes.

32 **24.2.3.4 Flood Risk Reduction**

33 Implementation of the Delta Plan could result in construction and operation of setback levees, floodplain
34 expansion, levee maintenance, levee modification and dredging projects, as described in Section 2A,
35 Proposed Project and Alternatives.

36 **24.2.3.4.1 Construction**

37 The actions and projects that could be implemented as part of efforts to reduce risk of floods in the Delta
38 would result in the consumption of energy in the form of fossil fuel and energy needed to extract, process,
39 transport, and dispose of nonrenewable natural resources used in the construction process, such as gravel,
40 petroleum products, steel, and other materials, as described in Section 24.2.3.1.1.

1 24.2.3.4.2 Operation

2 Operation of the projects related to reducing flood risk would also result in consumption of energy
3 resources, such as fossil fuels combusted for transportation of goods and people associated with levee
4 maintenance, and building and equipment use (e.g., pumps, occasional dredging). Both direct combustion
5 of fuels (i.e., gasoline, diesel, and natural gas) and indirect fuel consumption for electricity generation
6 would result from operation of projects under the Proposed Project.

7 24.2.3.5 *Protection and Enhancement of Delta as an Evolving Place*

8 Implementation of the Delta Plan could result in construction and operation of new gateways, bike lanes,
9 parks, trails, and marinas and facilities to support wildlife viewing, angling, and hunting, as well as
10 additional retail uses and restaurants in legacy towns to support tourism, as described in Section 2A,
11 Proposed Project and Alternatives.

12 24.2.3.5.1 Construction

13 The actions and projects that could be implemented as part of efforts to protect and enhance the Delta as
14 an evolving place would result in the consumption of energy in the form of fossil fuel and energy needed
15 to extract, process, transport, and dispose of nonrenewable natural resources used in the construction
16 process, such as gravel, petroleum products, steel, and other materials, as described in Section 24.2.3.1.1.

17 24.2.3.5.2 Operation

18 Operation of the projects related to protecting and enhancing the Delta as an evolving place would also
19 result in consumption of energy resources, such as fossil fuels combusted for transportation of goods and
20 people, and building and equipment use, as described in Section 24.2.3.1.2.

21 24.2.4 Recommended Energy Efficiency Measures

22 The following energy conservation measures should be applied to construction and operation of projects
23 encouraged by the Proposed Project. Not all measures would be appropriate for every project.

24 24.2.4.1 *Construction*

- 25 ♦ Use local, recycled, and renewable materials.
 - 26 • Range of Effectiveness: Varies depending on sources and types of materials and distances
 - 27 from project site
- 28 ♦ Develop and implement a plan to reduce construction worker trips to achieve average vehicle
- 29 ridership of 1.5 persons or greater.
 - 30 • Range of Effectiveness: Varies depending on the numbers of workers and travel distances
- 31 ♦ Implement a shuttle service to and from retail services and food establishments during lunch
- 32 hours, or employ a catering service to bring lunch to the project site. This measure is most
- 33 suitable for use in urbanized areas.
 - 34 • Range of Effectiveness: Varies depending on the numbers of workers and travel distances
- 35 ♦ Use alternative fuels (e.g., compressed natural gas, liquefied natural gas, propane, biodiesel,
- 36 ethanol blends) for worker and delivery trucks and construction equipment, where possible.
- 37 • As described under “Exhaust Emissions” in Mitigation Measure 9-1 in Section 9, Air Quality,
- 38 this measure has the potential co-benefits of reducing emissions of reactive organic gases

- 1 (ROG), and toxic air contaminants (TAC), and fine particulate matter with an aerodynamic
2 resistance diameter of 2.5 micrometers or less (PM_{2.5}). The potential exists for an increase in
3 emissions of oxides of nitrogen (NO_x).
- 4 • Range of Effectiveness: 0- to 22-percent reduction in greenhouse gas (GHG) emissions
5 (CAPCOA 2010)
 - 6 ♦ Use electric and hybrid construction equipment. Provide ultra-low-emission, low-emission,
7 hybrid, or electric vehicles, worker and delivery trucks, and construction equipment.
 - 8 • This measure has the co-benefits of reducing emissions of NO_x, ROG, and TAC/PM_{2.5}.
 - 9 • Range of Effectiveness: 2.5 to 80 percent of GHG emissions from equipment that is electric
10 or hybrid if used 100 percent of the time (CAPCOA 2010)
 - 11 ♦ Limit construction equipment idling to less than the California Air Resources Board's regulation
12 requirement of 5 minutes.
 - 13 • Range of Effectiveness: Varies with the amount of idling occurring and the amount reduced
14 (CAPCOA 2010)
 - 15 ♦ Institute a plan for heavy-duty off-road vehicles to minimize fuel consumption during
16 construction.
 - 17 ♦ Inventory tracking program for construction vehicles (e.g., requiring hour meters on equipment;
18 documenting the serial number, horsepower, age, fuel type, maintenance, and so on of all onsite
19 equipment and daily logging of the operating hours of the equipment).
 - 20 • Range of Effectiveness: Not applicable on its own; this measure ensures compliance with
21 other mitigation measures (CAPCOA 2010)

22 **24.2.4.2 Operation**

- 23 ♦ Use renewable energy generated on-site (i.e., solar, wind, hydroelectric).
- 24 ♦ Use alternative fuels for maintenance vehicles and equipment.
- 25 ♦ Use energy-efficient equipment for operation and maintenance of proposed facilities (e.g., pumps,
26 hydraulic equipment, maintenance equipment).
- 27 • Equipment shall conform to U.S. Department of Energy best practices, Consortium for
28 Energy Efficiency initiatives and guidance, and National Electrical Manufacturers
29 Association standards where possible.
- 30 ♦ Use combined heat and power, where appropriate.
- 31 ♦ Require proposed buildings to exceed Title 24 standards by 20 percent or more.

32 **24.3 Significant and Unavoidable Impacts of the** 33 **Proposed Project and Alternatives**

34 CEQA section 21100(b)(2)(A) provides that an EIR shall include a detailed statement setting forth “[i]n a
35 separate section... [a]ny significant effect on the environment that cannot be avoided if the project is
36 implemented.” Sections 3 through 21 of this EIR provide descriptions of the potential environmental

1 effects of the Proposed Project and alternatives for all applicable environmental resource areas, as well as
 2 mitigation measures to mitigate project effects. In each case where a significant and unavoidable impact
 3 was identified for the Proposed Project, a significant and unavoidable impact was also identified for each
 4 project alternative.

5 Significant and unavoidable impacts of the Proposed Project and project alternatives are identified in
 6 Table 24-1, with reference to the section of the EIR where the significance of each impact after mitigation
 7 is discussed. Cumulative impacts are discussed in Section 22, Cumulative Impact Assessment.

Table 24-1
 Summary of Significant and Unavoidable Impacts of the Proposed Project and Project Alternatives

Significant and Unavoidable Impacts	EIR Section Reference
3. Water Resources	3.4.3.6
3-1. Violate Any Water Quality Standards or Waste Discharge Requirements or Substantially Degrade Water Quality	
3-2. Substantially Deplete Groundwater Supplies or Interfere Substantially with Groundwater Recharge	
3-3. Substantially Change Water Supply Availability to Water Users That Use Delta Water	
4. Biological Resources	4.4.3.6
4-1. Substantial Adverse Effects on Sensitive Natural Communities, Including Wetlands	
4-2. Substantial Adverse Effects on Special-status Species	
4-3. Substantial Adverse Effects on Fish or Wildlife Species Habitat	
4-4. Interfere Substantially with the Movement of any Native Resident or Migratory Fish or Wildlife Species or with Established Native Resident or Migratory Wildlife Corridors	
4-5. Conflict with Any Local Policies or Ordinances Protecting Biological Resources or the Provisions of an Adopted Habitat Conservation Plan, Natural Community Conservation Plan, or Other Approved Local, Regional, or State Habitat Protection Plan	
5. Delta Flood Risk	5.3.3.6
5-1. Substantially Alter the Existing Drainage Pattern of the Site or Area, Including Through the Alteration of the Course of a Stream or River, or Substantially Increase the Rate or Amount of Surface Runoff in a Manner Which Would Result in Flooding On- or Offsite	
5-2. Create or Contribute Runoff Water Which Would Exceed the Capacity of Existing or Planned Stormwater Drainage Systems or Provide Substantial Additional Sources of Polluted Runoff	
5-4. Expose People or Structures to a Significant Risk of Loss, Injury, or Death Involving Flooding, Including Flooding as a Result of the Failure of a Levee or Dam	
5-5. Place Within a 100-year Flood Hazard Area Structures Which Would Impede or Redirect Flood Flows, or Inundation by Seiche, Tsunami, or Mudflow	
6. Land Use and Planning	6.4.3.6
6-1. Physical Division of an Established Community	
6-2. Conflict of Constructed Facilities with an Applicable Land Use Plan, Policy, Regulation, or Restriction on Land That Was Adopted for the Purpose of Avoiding or Mitigating an Environmental Impact	
7. Agriculture and Forestry Resources	7.4.3.6
7-1. Conversion of Farmland to Nonagricultural Use	
7-2. Conflict with Existing Zoning for Agricultural Use or a Williamson Act Contract	
7-3. Conflict with Existing Zoning for, or Cause Rezoning of, Forestland, Timberland, or Timberland Zoned for Timberland Production	

Table 24-1
Summary of Significant and Unavoidable Impacts of the Proposed Project and Project Alternatives

Significant and Unavoidable Impacts	EIR Section Reference
7-4. Loss of Forestland or Conversion of Forestland to Nonforest Use	
7-5. Involve Other Changes in the Existing Environment That, Because of Their Location or Nature, Could Result in Conversion of Farmland to Nonagricultural Use or Conversion of Forestland to Nonforest Use	
8. Visual Resources	8.4.3.6
8-1. Substantial Degradation of Visual Qualities	
8-2. Adverse Effects on Scenic Vistas and Scenic Resources	
8-3. New Sources of Substantial Light or Glare	
9. Air Quality	9.5.3.6
9.1. Construction and Operations of Projects Could Conflict with an Applicable Air Quality Plan, Contribute Substantially to an Air Quality Violation, and/or Result in a Cumulatively Considerable Net Increase of Nonattainment Pollutants	
10. Cultural Resources	10.4.3.6
10-1. Disturbance or Destruction of Prehistoric and Historic-Era Archaeological Resources	
10-2. Discovery of Unrecorded Human Remains	
10-3. Disturbance or Destruction of Historic Buildings, Structures, and Linear Features	
10-4. Disturbance or Destruction of Cultural Landscapes and Traditional Cultural Properties	
11. Geology and Soils	11.4.3.6
11-1. Exposure of People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Rupture of a Known Earthquake Fault	
11-2. Exposure of People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Due to Strong Ground Motion Associated with Seismic Shaking	
11-3. Construction and Operations of Projects Could Be Located on a Geologic Unit or Soil That Is Unstable, or That Would Become Unstable as a Result of the Project, and Potentially Result in Loss of Bearing Value, Lateral Spreading, Subsidence, Liquefaction or Collapse	
11-4. Substantial Soil Erosion or the Loss of Topsoil	
11-5. Construction of Projects Could Lead to Impacts Associated with the Presence of Expansive Soils	
11-6. Operation of Projects Could Result in Impacts Associated with the Occurrence of Nuisance Water in Adjacent Areas Due to Leakage	
11-7. Exposure of People or Structures to Potential Substantial Adverse Effects, Including the Risk of Loss, Injury, or Death Involving Landslides	
11-8. Have Soils Incapable of Adequately Supporting the Use of Septic Tanks or Alternative Waste Water Disposal Systems Where Sewers Are Not Available for the Disposal of Waste Water	
11-9. Substantial Risks to Life or Property Due to Construction of Project Facilities on High Organic Matter Soils	
12. Paleontological Resources	12.5.4
12-1. Destruction of Paleontological Resources or Unique Geological Features	

Table 24-1**Summary of Significant and Unavoidable Impacts of the Proposed Project and Project Alternatives**

Significant and Unavoidable Impacts	EIR Section Reference
13. Mineral Resources	13.5.4
13-1. Loss of Availability of a Known Mineral Resource That Would Be of Value to the Region and Residents of the State	
13-2. Loss of Availability of a Locally Important Mineral Resource Recovery Site Delineated on a Local General Plan, Specific Plan, or Other Land Use Plan	
14. Hazards and Hazardous Materials	14.5.3.3
14-1. Create a Significant Hazard to the Public or the Environment through the Routine Transport, Use, or Disposal of Hazardous Materials or through Reasonably Foreseeable Upset and Accident Conditions Involving the Release of Hazardous Materials into the Environment	
14-2. Be Located on a Site Which Is Included on a List of Hazardous Materials Sites Compiled Pursuant to Government Code, Section 65962.5 and, as a Result, Would Create a Significant Hazard to the Public or the Environment	
14-3. Create Vector Habitat That Would Pose a Significant Public Health Hazard	
14-4. Emit Hazardous Emissions or Handle Hazardous or Acutely Hazardous Materials, Substances, or Waste Within 0.25 Mile of an Existing or Proposed School	
14-5. Increase Safety Hazards for People Residing in or Working in the Project Areas Within the Vicinity of a Private Airstrip, Within an Airport Land Use Plan, or Within 2 Miles of a Public Airport or Public Use Airport, or Create Airport Safety Hazards	
14-6. Expose People or Structures to a Significant Risk of Loss, Injury or Death Involving Wildland Fires	
15. Noise	15.5.3.6
15.1. Exposure of Sensitive Receptors to Excessive Temporary, Short-term Construction Noise	
15.2. Temporary and Short-term Exposure of Sensitive Receptors to Excessive Groundborne Vibrations	
15.3. Long-term Exposure of Sensitive Receptors to Excessive Noise from Operations	
16. Population and Housing	16.4.3.6
16-1. Construction and Operations of Projects Could Induce Substantial Population Growth in an Area, Either Directly or Indirectly	
16-2. Displacement of Substantial Numbers of Existing Housing and/or People, Necessitating the Construction of Replacement Housing Elsewhere	
17. Public Services	17.4.3.6
17.1. Need for New or Physically Altered Governmental Facilities to Maintain Acceptable Service Ratios, Response Times, or Other Performance Objectives for Fire Protection, Police Protection, Schools, Parks, or Other Public Facilities	
18. Recreation	18.4.3.6
18.1. Impair, Degrade, or Eliminate Recreation Facilities and Activities	
18.2. Increase the Use of Existing Recreation Facilities	
18.3. Require the Construction or Expansion of Recreation Facilities Which Might Have an Adverse Physical Effect on the Environment	

Table 24-1
Summary of Significant and Unavoidable Impacts of the Proposed Project and Project Alternatives

Significant and Unavoidable Impacts	EIR Section Reference
19. Transportation, Traffic, and Circulation	19.4.4.6
19.1. Construction- and Operations-related Conflict with an Applicable Plan, Ordinance, or Policy Establishing Measures of Effectiveness for the Performance of the Circulation System, Taking into Account All Modes of Transportation	
19.2. Potential Increase in Hazards Related to a Design Feature	
19.3. Potential Reduction in Adequate Emergency Access	
19.4. Construction- and Operations-related Conflict with Adopted Policies, Plans, or Programs Regarding Bicycle or Pedestrian Facilities	
20. Utilities and Service Systems	20.4.3.6
20.1. Require or Result in the Construction of New Water or Wastewater Treatment Facilities or Stormwater Drainage Facilities or the Expansion of Existing Facilities, the Construction of Which Would Have Significant Environmental Effects	
20.2. Generate Solid Waste That Would Exceed the Permitted Capacity of Local Landfills or Cause Conflicts with Federal, State, and Local Statutes and Regulations Related to Solid Waste	
21. Climate Change and Greenhouse Gas Emissions	21.4.3.6
21.1. Construction and Operations of Projects Could Result in an Increase in GHG Emissions That May Have a Significant Impact on the Environment	

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24.4 Significant Irreversible Environmental Changes That Would Result from Implementing the Proposed Project and Alternatives

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Public Resources Code section 21100(b)(2)(B) provides that an EIR shall include a detailed statement setting forth “[i]n a separate section... [a]ny significant effect on the environment that would be irreversible if the project is implemented.” State CEQA Guidelines section 15126.2(c) provides the following guidance for an analysis of significant irreversible changes of a Proposed Project:

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Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible because a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irretrievable commitments of resources should be evaluated to assure that such current consumption is justified.

17

The Proposed Project includes policies and recommendations that address the following categories.

18

19

- ◆ Reliable water supply
- ◆ Delta ecosystem restoration

- 1 ♦ Water quality improvement
- 2 ♦ Flood risk reduction
- 3 ♦ Protection and enhancement of Delta as an evolving place

4 Each of these potentially could result in significant irreversible environmental changes, as described in
5 the following subsections. In each case where a significant irreversible environmental change was
6 identified for the Proposed Project, a significant and irreversible environmental change was also identified
7 for each project alternative.

8 **24.4.1 Reliable Water Supply**

9 Implementation of the Proposed Project and project alternatives could encourage development of water
10 supply projects including surface and ground water storage facilities, water intakes, pumping plants,
11 pipelines and tunnels, regulating reservoirs, water transfers, reservoir (Central Valley Project/State Water
12 Project) operation, and hydroelectric generation, as described in Section 2A, Proposed Project and
13 Alternatives. These projects would indirectly result in the irreversible commitment of nonrenewable
14 natural resources used in the construction process, such as gravel, petroleum products, steel, and other
15 materials. They would also result in the commitment of slowly renewable resources, such as wood
16 products, and development of additional water resources for consumptive uses. To the extent that such
17 projects are constructed on currently sensitive natural communities or agricultural land, they may also
18 result in an irreversible conversion of sensitive natural communities and agricultural land. Operation of
19 these projects would also result in irreversible commitments of energy resources.

20 **24.4.2 Delta Ecosystem Restoration**

21 Implementation of the Proposed Project and project alternatives could encourage floodplain restoration,
22 riparian restoration, wetland restoration, stressor management, invasive species management, and levee
23 modifications and associated infrastructure (e.g., levee removal/degradation, pumping facilities,
24 weirs/gates, dredging) to accomplish Delta ecosystem restoration objectives, as described in Section 2A,
25 Proposed Project and Alternatives. These projects would indirectly result in the irreversible commitment
26 of nonrenewable natural resources used in the construction process, such as gravel, petroleum products,
27 steel, and other materials. Operation and maintenance activities associated with these projects could also
28 result in irreversible commitments of energy resources such as fossil fuels, and electricity. To the extent
29 that such projects are constructed on currently agricultural land, they may also result in an irreversible
30 conversion of agricultural land.

31 **24.4.3 Water Quality Improvement**

32 Implementation of the Proposed Project and project alternatives could encourage construction and
33 operation of water treatment plants, desalination plants, pipelines, wastewater treatment plants,
34 stormwater treatment facilities, and agricultural runoff treatment facilities to achieve Delta Plan water
35 quality objectives, as described in Section 2A, Proposed Project and Alternatives. These projects would
36 indirectly result in the irreversible commitment of nonrenewable natural resources used in the
37 construction process, such as gravel, petroleum products, steel, and other materials. To the extent that
38 such projects are constructed on currently sensitive natural communities or agricultural land, they may
39 also result in an irreversible conversion of sensitive natural communities and agricultural land. Operation
40 of these projects would also result in irreversible commitments of energy resources and chemicals used in
41 the water treatment process.

24.4.4 Flood Risk Reduction

Implementation of the Proposed Project and project alternatives could result in construction and operation of setback levees, floodplain expansion, levee maintenance, levee modification and dredging projects, as described in Section 2A, Proposed Project and Alternatives. These projects would indirectly result in the irreversible commitment of nonrenewable natural resources used in the construction process, such as gravel, petroleum products, steel, and other materials. To the extent that such projects are constructed on currently sensitive natural communities or agricultural land, they may also result in an irreversible conversion of sensitive natural communities and agricultural land.

24.4.5 Protection and Enhancement of Delta as an Evolving Place

Implementation of the Proposed Project and project alternatives could result in construction and operation of new gateways, bike lanes, parks, trails, and marinas and facilities to support wildlife viewing, angling, and hunting, and additional retail uses and restaurants in legacy towns to support tourism, as described in Section 2A, Proposed Project and Alternatives. These projects would indirectly result in the irreversible commitment of nonrenewable natural resources used in the construction process, such as gravel, petroleum products, steel, and other materials. They would also result in the commitment of slowly renewable resources, such as wood products, and would result in the use of additional water to serve these new facilities. Operation of these projects would also result in irreversible commitments of energy resources, the need to treat additional waste water and dispose of additional garbage generated through use of the new facilities.

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