

4.3.26 Growth Inducement and Other Indirect Effects

4.3.26.1 Direct Growth Inducement

Construction Jobs

Construction of Alternative 4A would require a peak of approximately 2,278⁷ construction workers over a fourteen-year period. It is estimated that approximately 30 percent of these workers would come from out of state (due to the specialized nature of some of the jobs) and reside temporarily in the vicinity. Assuming the peak number of construction jobs (assumed to occur in year four of the eight-year period, as discussed in Chapter 16, *Socioeconomics*), this would mean approximately 752 workers coming from out of state. Construction would occur in the Delta area roughly between Sacramento and Stockton, and it is expected that the remaining approximately 3,100 workers would be drawn from the labor force of the five Delta counties in the project vicinity—Contra Costa, Sacramento, San Joaquin, Solano, and Yolo. The 1,526 jobs expected to be drawn from the local labor pool represents approximately 7% of the number of construction jobs in four of the five counties (Sacramento, San Joaquin, Solano, and Yolo)⁸ in 2009, according to the California Department of Employment (California Employment Development Department 2011). While this is not an inconsequential percentage of construction jobs in 2009, the 1,526 project construction jobs is substantially less than the 13,000 construction jobs that were *lost* in the previous year (from 2008 to 2009) (California Employment Development Department 2011), due to the ongoing economic downturn.

With respect to the 752 workers who are assumed would be from out of state, according to the 2010 decennial census, there were almost 20,000 vacant residential units for rent in the five Delta counties in 2010 and, in the cities of Sacramento and Stockton alone, there were 4,052 vacant residential units for rent (U.S. Census Bureau 2011). All these jurisdictions except Yolo County had residential rental vacancy rates higher than the 5% rate considered optimal to allow normal turnover and renter mobility.⁹ The cities of Sacramento and Stockton alone had a combined total of 12,591 vacant residential units for rent and rental vacancy rates of 8.3% and 9.4%, respectively. In addition to the available rental housing units, there are recreational vehicle and mobile home parks and numerous hotels and motels within the five-county region to accommodate any construction workers. Given the availability of housing in the project vicinity, out-of-state workers would be readily accommodated by existing housing; therefore the influx of these workers during project construction would not induce substantial new housing development.

⁷ Based on the estimated construction workforce presented in Chapter 16, *Socioeconomics*, Table 16-19.

⁸ Information on construction employment for Contra Costa County is not included in the industry employment by county data provided by the California Employment Development Department; therefore the construction employment numbers discussed here do not include Contra Costa County. In addition the only annual average industry employment data provided for San Joaquin and Solano counties is for the Stockton Metropolitan Statistical Area (MSA) and the Vallejo-Fairfield MSA, respectively; consequently the job information for the four counties presented here is likely to be understated to some degree, although it is assumed the MSAs reflect county employment trends and are the major employment centers in their respective counties.

⁹ According to the Association of Bay Area Governments (ABAG), in the Bay Area a 5% vacancy rate is considered necessary to permit ordinary mobility in rental housing (i.e., normal housing turnover and mobility on the part of renters), and a 2% vacancy rate is considered necessary to permit ordinary mobility in for-sale housing (Association of Bay Area Governments ND:1-18.) Rental vacancy rates in four of the five Delta counties ranged from 6.8% to 8.3%; Yolo County's rental vacancy rate was 5%.

1 **Permanent Jobs**

2 Alternative 4A would require approximately 129 permanent operations and maintenance workers,
3 who would be anticipated to live in the Delta region. This number represents about 0.02% of the
4 total nonfarm jobs and 0.4% of the transportation, warehousing, and utilities jobs in the five Delta
5 counties (California Employment Development Department 2011). It is therefore likely that this
6 small number of new jobs would readily be filled by the local labor force and would not induce
7 additional growth in the area. Assuming some or all of the jobs were specialized and required
8 workers from outside the local labor pool, given the availability of housing in the project vicinity,
9 these workers would be readily accommodated by existing housing; therefore the influx of these
10 workers during project operation would not induce substantial new housing development.

11 **4.3.26.2 Indirect Growth Inducement Associated with Facility** 12 **Construction and Operation**

13 **Access Roads within the Plan Area**

14 Construction of Alternative 4A water conveyance facilities will be identical to Alternative 4. In
15 general, construction of roads in relatively undeveloped areas has the potential to induce growth by
16 facilitating access to such areas by removing lack of roadway infrastructure as an obstacle to
17 growth. The temporary access roads would be removed following construction and the land would
18 be returned to its pre-project conditions; therefore temporary roads would not have the potential to
19 induce future development. The permanent access roads would remain and, given the nature of the
20 Plan Area, would largely be located on agricultural or open space lands. However, existing roads,
21 including Highways 84, 160, and 4, are located close to much of the proposed alignments and facility
22 sites, and the majority of the permanent access roads would be short segments providing a direct
23 route between an existing road and a given project facility; therefore the new permanent roads
24 would not provide access to substantial areas of agricultural or undeveloped lands not already
25 served by area roads. No changes are proposed to the land use or zoning designations of land within
26 the Plan Area; although the construction of proposed project facilities (including the permanent
27 access roads) would remove the specific facility sites from agricultural production or other current
28 land use, as discussed in Chapters 13 and 14, adjacent lands would continue to be designated for
29 their current land uses. Therefore, the construction of the relatively limited segments of permanent
30 access roads would not induce urban development.

31 **Flood Risk Reduction**

32 Actions under Alternative 4A are not anticipated to have any substantial impact or change on
33 potential for flooding within the Plan Area and downstream areas (RDEIR/SDEIS Section 4.3.2
34 *Surface Water*). Alternative 4A would not result in an increase in potential risk for flood
35 management compared to Existing Conditions when the changes due to sea level rise and climate
36 change are eliminated from the analysis. Peak monthly flows under Alternative 4A in the locations
37 considered in the analysis done were similar to or less than those that would occur under Existing
38 Conditions without the changes in sea level rise and climate change; or the increased peak monthly
39 flows would not exceed the flood capacity of the channels at these locations. It is not expected that
40 there will be changes to land use or zoning designations within the Plan Area and therefore, no
41 large-scale or substantial development would be expected to occur. There is not anticipated to have
42 any indirect effect on growth.

4.3.26.3 Indirect Growth Inducement Potential: Summary of Modeling Results

The following sections highlight changes in SWP and CVP deliveries associated with the project alternatives based on modeling conducted using CALSIM II, focusing on changes in municipal and industrial (M&I) deliveries (also referred to as urban deliveries). Figure 4.3.1-26 summarizes overall changes in SWP deliveries to both agricultural and M&I contractors for Alternative 4A (H3 and H4) relative to Existing Conditions (the CEQA baseline) and the No Action Alternative (ELT) (which reflects with sea level rise and climate change (i.e., effects of precipitation and snowpack). Figure 4.3.1-25 summarizes changes in CVP deliveries under Alternative 4A (H3 and H4) relative to Existing Conditions as well as the No Action Alternative (ELT).

Note that the CALSIM II model was designed to evaluate water deliveries for the project as a whole, and was not designed to provide delivery allocation at the contractor level. Under circumstances of reduced SWP and CVP deliveries, CALSIM II tends to allocate water first to contractors in the northern portion of the project and then to contractors in the south. This results in an uneven distribution of reductions, with contractors in the south receiving larger reductions than contractors in the north. Consequently, where reduced deliveries are projected (Alternative 4A (Scenario H4)), some contractors (and therefore hydrologic regions) are projected to experience much larger decreases than others. This discrepancy is for the most part an artifact of the algorithm used in the model. Although system constraints may still lead to differences in distribution of reductions, these reductions in deliveries are likely to be more evenly distributed across the regions than CALSIM II has predicted. For more information on the modeling of water deliveries using the CALSIM II model, see Chapter 5, *Water Supply*, and Appendix 5A, *BDCP EIR/EIS Modeling Technical Appendix*, of the Draft EIR/EIS.

For purposes of analyzing the project's potential to induce growth, this analysis focuses on the net increase in annual average deliveries; all information on water deliveries presented below is for average annual deliveries in normal hydrologic years. The SWP modeling results reflected in the tables and figures presented in this section include Table A water as well as Article 21 water.¹⁰

This analysis does not address potential effects of redistribution of SWP water supply among SWP water contractors that might occur from an SWP contract amendment or funding agreements for implementing the project, other than as possible multi-year or permanent agricultural to urban water transfer of SWP water. A SWP contract amendment or funding agreement could include provisions for allocating benefits, such as a more reliable water supply, to contractors who pay for the project and could create the potential for redistributing SWP water. At this time, because a specific SWP amendment or funding agreement has not been developed, it would be too speculative pursuant to Section 15145 of the State CEQA Guidelines to evaluate changes in SWP water

¹⁰ Article 21 water is interruptible water allocated under certain conditions. Water supply under Article 21 becomes available only during wet months of the year (December through March). A SWP contractor must have an immediate use for Article 21 supply or a place to store it outside of SWP; therefore not all SWP contractors can take advantage of this additional supply. Article 21 is a section of the contract between DWR and the water contractor that permits delivery of water in excess of delivery of SWP Table A. It is apportioned to contractors that request it in the same proportion as their SWP Table A water. Article 21 water is allocated under certain conditions: (a) SWP's share of San Luis Reservoir is full or projected to fill in the near term; (b) other SWP reservoirs are full or at their storage targets, or conveyance capacity to fill these reservoirs is maximized; (c) releases from upstream reservoirs plus unregulated inflow exceed the water supply needed to meet Sacramento Valley in-basin uses; (d) SWP Table A deliveries are being fully met; and (e) Banks Pumping Plant has spare capacity (California Department of Water Resources 2008b:32,39).

1 distribution at this time. If the SWP amendment or agreement, after it is developed, may have
2 potential to have an environmental effect not already contemplated in the BDCP EIR/EIS, DWR
3 would prepare additional analysis.

4 **Alternative 4A**

5 As described in Section 4.1, *Introduction*, of this RDEIR/SDEIS, facility construction under
6 Alternative 4A would be identical to Alternative 4 and operational criteria would be similar. The
7 addition of new north Delta intakes as well as changes to Delta regulatory requirements under
8 Alternative 4A would provide operational flexibility that would allow the SWP and CVP to increase
9 Delta exports compared to operations under existing conditions, and the Early Long Term. Water
10 supply and conveyance operations would follow the guidelines described as Scenario H3 or H4,
11 which variously include or exclude implementation of fall X2 and/or enhanced spring outflow.
12 Alternative 4A and the Early Long Term also assume that there would be an increase in M&I water
13 rights demands north of the Delta, which would increase overall system demands and reduce the
14 amount of CVP water available for export south of the Delta.

15 Consequently, SWP M&I deliveries under Alternative 4A are projected to increase due to increased
16 capacity for Delta exports, while in some cases CVP deliveries south of Delta are projected to
17 decrease due to increased water rights demands north of Delta. Consequently, SWP M&I deliveries
18 under Alternative 4 are projected to increase due to increased Delta exports, while in some cases
19 CVP deliveries are projected to decrease due to increased water rights demands. See Section 4.3.1.,
20 *Water Supply*, of this RDEIR/SDEIS for more detail on changes in Delta exports and SWP and CVP
21 deliveries under Alternative 4A.

22 **Changes in Deliveries to the Hydrologic Regions**

23 **SWP.** Compared to Existing Conditions, Alternative 4A would increase (H3) or decrease (H4)
24 deliveries to all hydrologic regions depending on the range of spring outflow requirements. Exceptions
25 would be the San Joaquin River region, which would experience an increase (H4) or no change in
26 deliveries (H3). South Coast would either receive the largest net increase in deliveries (up to 87 TAF of
27 Table A deliveries under H3) or the largest net decrease in deliveries (a decrease of up to 170 TAF of
28 Table A deliveries under H4) among the regions.

29 Compared to the No Action Alternative ELT, Alternative 4A is expected to show less extreme of an
30 effect (less increase or less decrease) than the results shown in Table 30-16 in the Public Draft EIR/EIS
31 at the No Action Alternative (2060). Alternative 4A would be expected to increase (H3) or decrease
32 (H4) deliveries to all hydrologic regions depending on the range of spring outflow requirements.
33 Exceptions would be for the San Joaquin River region, which would experience no change in
34 deliveries (H3 and H4) and the Tulare Lake region which could possibly receive an increase (H4).
35 Compared to No Action Alternative ELT, under Scenario H3 and H4, South Coast would receive the
36 largest net increase in deliveries (Table A deliveries) among the regions.

37 **CVP.** The operational scenarios under Alternative 4A would not change M&I deliveries for the
38 Sacramento River, South Coast, South Lahontan and Colorado River regions because there are no
39 affected CVP contractors located in these regions. Compared to Existing Conditions, Scenarios H3
40 and H4 would decrease deliveries to the other hydrologic regions; San Francisco Bay is projected to
41 receive the largest potential decrease (5 TAF) among the affected hydrologic regions. For more
42 information, refer to Table 30-17 in the Public Draft EIR/EIS.

1 Compared to the No Action Alternative ELT, Alternative 4A is expected to show less extreme of an
2 effect (less increase or less decrease) than the results shown in Table 30-17 in the Public Draft EIR/EIS
3 at the No Action Alternative (2060). Scenario H3 and H4 would increase deliveries to the other
4 hydrologic regions. San Francisco Bay is projected to receive the largest potential increase among
5 the affected hydrologic regions.

6 **Alternative 4A Compared to Existing Conditions, Early Long Term.**

7 **SWP.** Compared to the Existing Conditions ELT, Alternative 4A is expected to show less extreme of an
8 effect (less increase or less decrease) than the results contained in the Alternative 4 discussion which
9 looks at Alternative 4A conditions at 2060. By 2025, total deliveries to all SWP contractors are
10 projected to decrease by 9% or increase by 5% at ELT and would remain similar or decrease by
11 13% at LLT relative to Existing Conditions depending upon the range of spring Delta outflow
12 requirements. Under Alternative 4A, by 2025, average annual total SWP Table A deliveries with
13 Article 56 (without Article 21) as compared to Existing Conditions, would decrease (11%) and
14 increase (8%) at ELT and would decrease (17%) and increase (3%) at LLT depending upon range of
15 spring outflow requirements, relative to Existing Conditions. Under Alternative 4A, average annual
16 total south of Delta SWP Table A deliveries with Article 56 (without Article 21) as compared to
17 Existing Conditions, would decrease (12%) and increase (8%) at ELT and would decrease (17%)
18 and increase (2%) at LLT depending upon range of spring outflow requirements. However, the
19 decrease in deliveries primarily would occur due to sea level rise and climate change.

20 **CVP.** By 2025, total deliveries to all CVP contractors are projected to increase by up to 3% relative to
21 Existing Conditions at ELT and up to 2% at LLT. Under Alternative 4A, average annual total south of
22 Delta CVP deliveries as compared to Existing Conditions, would decrease by up to 4% at ELT and by
23 up to 9% at LLT.

24 **Alternative 4 Compared to No Action Alternative Early Long Term**

25 **SWP.** Compared to the No Action Alternative ELT, Alternative 4A is expected to show less extreme of
26 an effect (less increase or less decrease) than the results contained in the Alternative 4 discussion
27 which looks at Alternative 4A conditions at 2060. By 2025, under average annual total SWP deliveries
28 to all SWP contractors are projected to increase by 12% (H3) or decrease by about 3% (H4) relative
29 to the No Action Alternative ELT depending upon the range of spring outflow requirements. Under
30 Alternative 4A, average annual total south of Delta SWP deliveries as compared to No Action
31 Alternative (ELT), would decrease (by about 4%) or increase (by about 16%) depending upon range
32 of spring outflow requirements.

33 **CVP.** By 2025, deliveries under Scenarios H3 and H4 to all CVP M&I contractors are projected to
34 increase by up to 3% relative to the No Action Alternative ELT and up to 2% at LLT. Under
35 Alternative 4A, average annual total south of Delta CVP deliveries as compared to No Action
36 Alternative (ELT), would increase by about 5%.

1 **Comparison of Water Deliveries with California Water Plan Projected Demand** ¹¹

2 As explained in Section 4.1.2.2, *Water Conveyance Facility Operations*, of this RDEIR/SDEIS,
3 operational components of the water conveyance facilities under Alternative 4A would be similar,
4 but not identical, to those described under Scenario H in Chapter 3, Section 3.6.4.2 of the Draft
5 EIR/EIS. However, Alternative 4A is analyzed at a shorter timeframe. Anticipated water deliveries
6 would also be similar as those observed under Alternative 4. Under Alternative 4, total SWP
7 deliveries to all regions would increase under two scenarios and would decrease under two other
8 scenarios compared to Existing Conditions. Under Scenario H3, total SWP deliveries to all regions
9 would increase by approximately 201 TAF, and under Scenario H4, total SWP deliveries to all
10 regions would decrease by approximately 295 TAF. Total CVP M&I deliveries to all regions would
11 decrease under both Alternative 4A scenarios: under Scenario H3 they would decrease by 10 TAF,
12 and under Scenario H4 CVP M&I deliveries would decrease by 10 TAF compared to Existing
13 Conditions. CVP agricultural deliveries would decrease by 215 TAF under Scenario H3, and would
14 decrease by 243 TAF under Scenario H4.

15 Based on the information above, under Alternative 4A Scenario H3, net SWP and CVP deliveries
16 would decrease by 2025. This decrease in supply is in contrast to projected increases in demand for
17 the hydrologic regions assuming the Current Trends demand scenario. Under Alternative 4A
18 Scenario H4, net SWP and CVP deliveries would decrease by 2025 compared to Existing Conditions.
19 This decrease in supply is in contrast to projected increases in demand for the hydrologic regions
20 assuming the Current Trends demand scenario.

21 **4.3.26.4 Potential for Increases in Water Deliveries to Agricultural** 22 **Contractors to Remove Obstacles to Growth**

23 Alternative 4A would have a similar effect as Alternatives 1A through 9. However, since Alternative
24 4A includes a smaller package of habitat restoration as part of its environmental commitment,
25 significantly more agricultural land would continue to be used for agricultural purposes. As
26 described in Chapter 5, *Water Supply*, and shown in Table 30-14, deliveries to agricultural
27 contractors are projected to increase under some alternatives. To the extent that the lack of
28 sufficient, reliable water supplies currently poses a constraint to agricultural production, then
29 increased reliable supplies have the potential to support increased agricultural production.
30 Increased reliability of supplies (e.g., increased supplies to agricultural contractors during dry
31 years) may support additional agricultural production. Where and how such increases would occur
32 likely could vary from one farming interest to another. Increased agricultural production could
33 support an increase in seasonal and permanent on-farm employment as well as increased economic
34 activity in the larger agricultural industry (associated with agricultural inputs, processing, transport,
35 etc.). The ability of local labor pools to support seasonal and permanent increases in employment
36 would likely vary from region to region.

¹¹ As described in Section 30.1.1.3, of the Draft EIR/EIS, the California Water Plan is updated every five years. The latest California Water Plan was released in 2009 and contains projections to the year 2050. It is not expected that there will be substantial changes in demand trends between 2050 and 2060 that would impact the comparison of the year 2050 projections from the California Water Plan with modeling projections for the BDCP at the “Late Long Term” BDCP planning horizon (year 2060).

4.3.26.5 Potential for Increases in Water Deliveries to Urban Contractors to Remove Obstacles to Growth

Operations under Alternative 4A would be identical to those analyzed under Alternative 4. However, Alternative 4A is analyzed at a shorter timeframe. Anticipated water deliveries would also be similar as those observed under Alternative 4.

For Alternative 4, Scenarios H3 and H4, growth potential supported by the project in the South Coast region represents the largest percentage of projected increase in population from 2010 to 2060 among the regions: 5.3% compared to Existing Conditions and 10.1% compared to the No Action Alternative for Scenario H3; and 6.2% compared to Existing Conditions and 7.5% compared to the No Action Alternative for Scenario H4.

The South Coast, San Francisco Bay, South Lahontan, and Colorado River regions are the regions that could realize the largest increases in population due to increases in M&I deliveries (Tables 30-20 and 30-21). However, Alternative 4A (Scenarios H3 and H4) are unlikely to result in an increase of deliveries significant enough that it would foster additional growth in these areas.

It is anticipated that Alternative 4A would create a similar effect.

Comparison of Project Growth Potential with Growth Forecasts from Regional Planning Agencies

This section compares the population growth potentially supported by M&I deliveries in these regions to the growth forecasts of the respective regional planning agencies. These four regions account for 93 to 99% of the potential population supported by deliveries in 2060 compared to Existing Conditions, and 89 to 90% of the potential population supported by deliveries in 2060 compared to the No Action Alternative for five of the six alternatives¹² that provide increased deliveries. Because deliveries to the other regions that would receive increases (Sacramento River, Central Coast, and Tulare Lake) would not support substantial potential population overall or compared to the population increases projected for each region, the growth potential of the project in these regions is limited. Therefore, this discussion focuses on the four regions that would receive the largest M&I increase.

¹² Under Alternative 9 these four regions account for 59% of total deliveries compared to the No Action Alternative (2060). However, because deliveries under this alternative are relatively small its potential to support population growth in any region receiving deliveries is limited: Alternative 9 would support less than 1% of the population increase projected to occur in the eight hydrologic regions between 2010 and 2060 and no more than 3% of the projected population increase in any particular hydrologic region.