Chapter 9
Growth-Inducing Impacts

Introduction

NEPA and CEQA require that an EIS and EIR discuss how a project, if implemented, could induce growth. This chapter presents an analysis of the potential growth-inducing impacts of Alternatives 2A, 2B, 3B, 4B, and 2C. This chapter provides the following:

- summary of the conclusions of the chapter's analysis,
- background information related to water supply and growth-inducement,
- the methodology used to conduct analysis of growth-inducing impacts,
- the results of the analysis, and
- the impact conclusions.

Summary of Analysis Conclusions

Each SDIP Alternative could remove an obstacle to growth and could encourage or facilitate other activities that could result in environmental effects. The direct effects of the project, through the cultivation of once-fallowed agricultural lands or through the stimulation of the local economy by project construction, are not expected to accommodate or induce growth. However, the indirect effects of the project, resulting from increases in water supplies for those receiving water exported from the Delta, could accommodate additional growth. This growth could result in impacts on special-status species, changes in stormwater runoff quantity and quality, the modification of slopes, and impacts on air and water quality, traffic, noise, various public services, and other sensitive resources. Mitigation of these impacts, should they occur, would be the responsibility of the local jurisdictions in which the growth would occur, not DWR or Reclamation. The impacts of this growth, if any, would be analyzed in detail either in General Plan EIRs for the local jurisdictions or in project-level CEQA compliance documents. Mitigation measures could include locating the growth in areas where sensitive resources are not located, minimizing the loss of these resources, or replacing any loss.

Growth-related impacts may be greatest under Alternative 2A because it would result in the greatest increase in south-of-Delta water deliveries. Alternatives 2B, 3B, and 4B and Alternative 2C would also remove obstacles to growth, or

encourage and facilitate other activities that could result in environmental effects, but to a lesser extent than Alternative 2A. The growth-inducing impacts under Alternatives 2B, 3B, and 4B would be least because water deliveries compared to study baselines (2001 and 2020 conditions) would either not increase or increase only slightly depending on the baseline condition. Growth-inducing impacts occurring under Alternative 2C would be expected to fall between those of Alternative 2A and Alternatives 2B, 3B, and 4B.

The following supporting material provides a more detailed evaluation on which these general conclusions are based.

Context and Background

The information contained in this section is needed to provide context to the analysis and to help the reader understand the structure of the analysis. This background information includes:

- the legal requirements for analyzing growth-inducing impacts in CEQA and NEPA documents;
- the guidance provided by the CALFED ROD regarding growth-inducing impacts;
- a brief description of SB 610 and SB 221 of 2001, which address the relationship between water supply and land use planning;
- a description of the DWR Water Supply Reliability Report and its relevance to this analysis; and
- a summary of growth projections for southern California.

CEQA and NEPA Requirements

Section 21100(b)(5) of CEQA requires an EIR to discuss how a proposed project, if implemented, may induce growth and the impacts of that induced growth (see also, State CEQA Guidelines Section 15126). CEQA requires the EIR to specifically discuss "the ways in which the proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment" (State CEQA Guidelines Section 15126.2[d]).

In addition, under authority of NEPA, CEQ Regulations require EISs to consider the potential indirect impacts of a proposed action. The indirect effects of an action include those that occur later in time or farther away in distance, but are still reasonably foreseeable, and "may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate" (40 CFR Section 1508.8[b]).

Evaluation of the growth-inducing effects of the SDIP is based on a qualitative analysis of the direct effects of constructing and operating the SDIP, and the

indirect effects that could result from use of the additional increment of water supply provided by the SDIP in the SWP and CVP contractor service areas. The evaluation of growth effects is based on water supply analyses that conclude that the water supply reliability for SWP and CVP contractors will incrementally improve with implementation of the SDIP. Specifically, this evaluation of potential growth-inducing impacts addresses whether the project would directly or indirectly: foster economic, population, or housing growth; remove obstacles to growth; increase population growth that would tax community service facilities; or encourage or facilitate other activities that cause significant environmental effects.

Section 15126.2 of the State CEQA Guidelines states specifically, "It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment." In other words, growth inducement is not to be considered adverse *per se*; impacts on resources resulting from growth may be too far removed from the actions of the water supply agency to require mitigation by the agency. The goal of the EIS/EIR in this regard, therefore, is one of disclosure.

Guidance in the CALFED Programmatic Record of Decision

The SDIP is considered a CALFED project because it is specifically included in the CALFED ROD. For background, therefore, it is useful to understand what conclusions were included in the CALFED ROD regarding the relationship between increased water supply and growth. The following text is excerpted from CALFED ROD, Attachment 1—CEQA Requirements, CEQA Findings of Fact (August 28, 2000); the full text is incorporated by reference. It is important to note, however, that the SDIP EIS/EIR stands on its own and does not rely on the analysis contained in the Programmatic EIS/EIR. It includes an independently developed analysis of the impacts of the SDIP, including the analysis of growth-inducing impacts.

> The Preferred Program Alternative is expected to result in an improvement in water supply reliability for beneficial use in the Bay Region, Sacramento River Region, and San Joaquin River Region, and South-of-Delta SWP and CVP Service Areas…. Modifications in Delta conveyance will result in improved water supply reliability, protection and improvement of Delta water quality, improvements in ecosystem health, and reduced risk of supply disruption due to catastrophic breaching of Delta levees.
>
> Consistent with the stated purposes of the CALFED Program since its outset in 1995, it is not the intent of this Program to address or solve all of the water supply problems in California. The CALFED Program is directly or indirectly tied to a number of specific project proposals that would help toward meeting California's water needs for a wide variety of beneficial uses. CALFED is an important piece of a much larger picture that is the continuing responsibility of local, regional, State and Federal jurisdictions.

There are differences of opinion as to whether improvements in water supply reliability would stimulate growth. The causal link between the CALFED Program and any increase in population or economic growth, or the construction of additional housing is speculative at this time. However, because this issue cannot be determined with certainty at this programmatic level of analysis, the assumption was made for this document that the improvement in water supply reliability that is associated with the Program could stimulate growth. This assumption assures that the EIS/EIR discloses the environmental consequences, at a programmatic level, associated with growth in the event that Program actions ultimately lead to this type of change.

At this programmatic level, it is unknown what level of growth or the likely location of any increases in population or construction of additional housing would take place. Increases in the population in the solution area are projected over the next 30 years, regardless of CALFED actions. When population growth occurs, it could lead to additional adverse impacts in certain locations, which local, regional, State, and Federal agencies will need to address when more information on those impacts and how to mitigate them is known. These impacts could include impacts on water quality and air quality, transportation, loss of open space, and other resource areas addressed in the EIS/EIR.

When additional growth occurs, these changes will be subject to local land use and regulatory decisions by individual cities and counties in the areas where they occur. Future development at the local level is guided by many considerations, only one of which is the reliability of water supply. These other factors include the policies in local general plans and zoning ordinance restrictions; the availability of a wide range of community services and infrastructure, such as sewage treatment facilities and transportation infrastructure; the availability of developable land; the types and availability of employment opportunities; and the analysis and conclusions based on an environmental review of proposed projects pursuant to CEQA. When additional population growth or new development occurs, and additional information is available, local, regional, State, and Federal governments will need to consider and address these potential adverse environmental impacts and methods to avoid or mitigate them.

Relationship to Senate Bill 610 and Senate Bill 221, 2001

Land use planning agencies in California plan growth based on a number of different factors, many unrelated to available water supplies, including economic factors and population dynamics. Also, according to California law, water suppliers are required to serve the needs of users within their service areas (see, e.g., *Swanson v. Marin Municipal Water Dist.* (1976) 56 Cal.App.3d 512, 524 [water district has a "continuing obligation to exert every reasonable effort to augment its available water supply in order to meet increasing demands"]).

The coordination between water supply and land use planning was strengthened in 2001 by the passage of SB 610 and SB 221, which require cities and counties to obtain assessments of the availability of water to supply new developments over a certain size and to obtain assurance from water suppliers that sufficient water is available before approving these new developments. The combined

effect of SB 610 and SB 221 is to impose upon cities and counties the ultimate responsibility for determining the sufficiency and availability of water as part of their environmental review and approval processes. In addition, a recent court case (*Save Our Peninsula Committee v. Monterey County Board of Supervisors* [2001] 87 Cal.App.4th 99) discussed how water supply sufficiency and the impacts of the proposed project on limited local supply sources were the key factors in deciding the adequacy of an EIR. Water supply availability in this instance was also clearly a determining factor in whether development was allowable.

SB 610 and 221 require only that water supply agencies inform land use jurisdictions regarding the availability of water supplies, type of infrastructure necessary to deliver the water, and impact of new development on supply reliability. SB 610 allows for local land use agencies to approve development despite a water agency's conclusion that the supplier's reliability levels would be compromised. Specifically, a water supplier could report to the local land use agency that water supplies are insufficient and development could still proceed regardless, should the land use authority decide to procure alternate supplies or, in the case of SB 610, adopt a statement of overriding considerations with respect to significant water supply impacts. Further, while SB 610 and SB 221 do attempt to increase the consideration of water supply factors in development decision-making, many proposed projects are not of a large enough scale to trigger the requirement to prepare a water supply assessment pursuant to SB 610 (500 or more residences, non-residential uses that would supply more than 1,000 persons, or mixed-use projects that would have a water demand equivalent to the demand of 500 residential units).

California Department of Water Resources Water Delivery Reliability Report

In 2002 DWR published the first in a biannual series of SWP delivery reliability reports to provide information on the ability of the SWP to deliver water under existing and future development. DWR issued this report to assist SWP contractors to assess the adequacy of the SWP component of their overall water supplies. The report states, "Information in this report may be used by local agencies in preparing or amending their water management plans and identifying the new facilities or programs that may be necessary to meet future water needs." The report also states, "Agencies will also find this report useful in conducting analyses mandated by legislation authored by Senator Sheila Kuehl (SB 221) and Senator Jim Costa (SB 610)."

The heart of the report is an analysis that provides forecasts of the delivery capability of the SWP under a variety of hydrologic circumstances with both 2001 and 2021 demands. These forecasts were created using the CALSIM II hydrologic model. This information was not used directly in the analysis for this EIS/EIR, but it was described here because it provides some context for the SDIP within the overall water supply capabilities of DWR.

Growth Projections

There is no doubt that California is expected to experience substantial growth over the next two decades. Numerous state, regional, and local agencies prepare estimates of growth to assist in planning for the effects of that growth, including the need for water supply, additional housing, roads and bridges, sewerage infrastructure, schools, hospitals, police and fire services, and to mitigate the projected negative impacts. Table 9-1 shows the population growth between 2000 and 2020 (in 5-year increments) projected by the California Department of Finance for all counties south of the Delta that could receive additional water as a result of the SDIP.

Table 9-1. South-of-the-Delta Population Forecast

County	2000	2005	2010	2015	2020
Alameda	1,466,900	1,580,200	1,671,200	1,735,800	1,811,800
Calaveras	41,000	47,800	53,400	57,900	62,200
Contra Costa	963,000	1,021,400	1,071,400	1,108,100	1,152,900
Fresno	816,400	893,300	970,900	1,043,100	1,134,600
Imperial	149,000	182,500	217,500	252,000	294,200
Kern	678,500	771,300	871,600	972,700	1,088,600
Kings	134,500	149,600	165,300	180,800	198,700
Los Angeles	9,716,000	10,169,100	10,605,200	10,983,900	11,584,800
Madera	127,700	152,600	178,900	203,000	229,200
Mariposa	17,300	19,600	21,500	23,000	24,300
Merced	214,400	239,900	266,700	292,400	322,700
Monterey	408,700	450,300	493,100	535,700	590,700
Orange	2,893,100	3,099,700	3,266,700	3,384,300	3,541,700
Riverside	1,577,700	1,864,700	2,159,700	2,459,600	2,817,600
San Benito	54,500	63,600	72,000	79,100	86,800
San Bernardino	1,742,300	1,980,000	2,231,600	2,487,700	2,800,900
San Diego	2,856,300	3,149,900	3,388,400	3,591,300	3,863,500
San Joaquin	573,600	645,600	727,800	803,400	887,600
San Luis Obispo	249,900	287,000	323,100	357,000	390,900
San Mateo	717,900	765,800	794,600	809,100	834,500
Santa Barbara	406,100	434,400	467,700	505,200	552,700
Santa Clara	1,709,500	1,867,400	1,987,800	2,063,000	2,163,000
Santa Cruz	259,300	284,500	311,900	339,900	370,600
Stanislaus	454,600	522,700	587,600	646,800	712,100
Tulare	375,100	422,000	469,800	515,600	570,900
Tuolumne	55,200	62,200	68,200	72,800	77,200
Ventura	765,300	818,600	877,400	934,000	1,007,200

Source: California Department of Finance, Interim County Projections, Estimated July 1, 2000, and Projections for 2005, 2010, 2015, and 2020.

Methodology

Level of Analysis Needed

CEQA states that the EIR should discuss "increases in the population [that] may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects. Also [the EIR should] discuss the characteristic of some projects which may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively."

Some specific guidance is provided by the Court's ruling in *Napa Citizens for Honest Government v. Napa County Board of Supervisors* ([2001] 91 Cal. App. 4th 342). The sufficiency of analysis of growth-inducing impacts was an issue contested in that case. In its decision, the Court provided the following guidance:

> …the EIR must discuss growth-inducing impacts even though those impacts are not themselves a part of the project under consideration, and even though the extent of the growth is difficult to calculate.
>
> It does not follow, however, that an EIR is required to make a detailed analysis of the impacts of a project on housing and growth. Nothing in the [CEQA] Guidelines, or in the cases, requires more than a general analysis of projected growth. The detail required in a particular case necessarily depends on a multitude of factors, including, but not limited to, the nature of the project, the directness or indirectness of the contemplated impact and the ability to forecast the actual effects the project will have on the physical environment…Indeed, the purpose of CEQA would be undermined if the appropriate governmental agencies went forward without an awareness of the effects a project will have on areas outside of the boundaries of the project area. That the effects of a project will be felt outside of the project area, however, is one of the factors that determines the amount of detail required in any discussion. Less detail, for example, would be required where those effects are more indirect than effects felt within the project area, or where it [would] be difficult to predict them with any accuracy.
>
> Because it cannot be known if the Project will cause growth in any particular area, and because the Project most likely will not be the sole contributor to growth in any particular area, it is not, however, reasonable to require the FSEIR to undertake a detailed analysis of the results of such growth.
>
> Neither CEQA itself, nor the cases that have interpreted it, require an EIR to anticipate and mitigate the effects of a particular project on growth [in] other areas.
>
> The FSEIR need not forecast the impact that the housing will have on as yet unidentified areas and propose measures to mitigate that impact. That process is best reserved until such time as a particular housing project is proposed.

In a recent CEQA case, *Defend the Bay v. City of Irvine* (No. G032062, 4th App. Dist., Div.3; 7/1/04 Daily J. D.A.R. 7965, June 29, 2004), the court reiterated the basic requirement regarding growth, referencing the *Napa Citizens* case by stating that "If a project will create jobs and bring people into the area, the EIR

must discuss the resulting housing needs, but not in minute detail. It is enough to identify the housing required and its probable location [if known]."

Two CEQA-related concepts are important to keep in mind in determining the level of analysis to be provided. First, CEQA is concerned with identifying impacts related only to physical changes in the environment. In order to evaluate the growth-related physical changes in the environment that may occur from a project, it is necessary to identify where and to what extent future growth will occur. The direct growth-related effects of a water supply project would involve localized economic effects such as job growth and temporary increased demand for housing related to project construction. The indirect effects of water supply projects are related to the physical changes (i.e., new construction) that would occur as a result of the additional water supplies being available to local governments. It can be difficult to identify with any degree of precision potential indirect growth-related effects resulting from an increase in water supply.

The second important concept to consider is that CEQA does not require undue speculation in predicting actual environmental consequences. (See CEQA Guidelines §§15144, 15145.) Thus, while it is acknowledged that additional water supplies can be growth-inducing, it is the responsibility of the lead agencies to describe the impacts of their project only to the extent that those impacts can be either known or reasonably predicted. Further, they are not required to adopt mitigation for impacts that require a great deal of speculation even to describe, and that are ultimately not within their control or statutory authority. (*Napa Citizens for Honest Government v. Board of Supervisors* [2001] 91 Cal.App.4th 342.)

Methods Used

The growth-inducing impact of each SDIP alternative was evaluated by comparing the total amount of current deliveries to CVP contractors and Table A deliveries to SWP contractors to the estimated changes in deliveries for each alternative. Article 21 water was not included in the growth analysis because of the annual uncertainty and variability of deliveries. Each SDIP alternative includes Operational Scenario A, B, or C. For purposes of this evaluation, the growth-inducing impacts expected under Alternatives 2B, 3B, and 4B would be identical because each alternative includes Operational Scenario B.

Implementing the SDIP could result in growth through four mechanisms. During Stage 1, growth could occur in the vicinity of the project site in the southern portion of the Delta as a result of the economic activity generated by constructing the fish control and flow control gates. Three types of operations-related impacts could occur during Stage 2: effects resulting from changes in agricultural land and water use patterns because of increased CVP and SWP water deliveries; growth in urban areas resulting from increases in CVP and SWP water deliveries; and growth in urban areas resulting from third-party water transfers facilitated by the increase in allowable exports.

For the purposes of this analysis, third parties can include DWR acquiring water through a Dry Year Program, SWP and CVP acquiring water through the Sacramento Valley Water Management Agreement, or other parties such as Metropolitan acquiring water in the Sacramento Valley and exporting it from the Delta. Each of these four mechanisms is described below.

Construction-Related Effects

Assessing the growth-inducing impacts of the construction-related effects is relatively straightforward. As the construction-related effects of the SDIP are within the control of the lead agencies, a fairly detailed level of analysis can be provided. The assessment of construction-related effects involves analyzing whether the relative magnitude of temporary and permanent jobs that would be created by the project would be large enough to require additional housing, or otherwise spur economic growth in the area surrounding the project, and determining whether that growth would have environmental impacts.

The construction of the SDIP would temporarily cause an increase in employment in the project area. The construction of the gates would last up to 30 months, and it is assumed that approximately 60% of the workers would originate from the local study area. The increase in population created by construction workers and their dependents may need to be accommodated from available local housing. It is assumed that there would be approximately three persons per family. The total number of jobs created and the number of housing units needed to accommodate the workers was compared against the total population in the project area.

Effects Resulting from Changes in Agricultural Land and Water Use because of Increased Central Valley Project and State Water Project Deliveries

The assessment of agricultural effects involves determining whether any fallowed lands could be brought into production as a result of implementing the SDIP, and whether farming those lands would have environmental impacts. Such impacts would occur if this additional water would result in land and water use changes that had environmental effects. For instance, impacts could occur if agricultural lands that had previously lain fallow for several years and had become habitat for sensitive species were put back into production as a result of the water made available by each SDIP alternative.

Hydrologic modeling results were used to estimate increases in allocations to SWP and CVP agricultural water contractors resulting from the higher allowable pumping rates associated with each alternative. Tables 9-2 and 9-3 show the increases in SWP and CVP allocations expected under 2001 and 2020 conditions, for each water year type and averaged over the 73-year study period. Table 9-4 shows the same information for changes in third-party water transfers. Table 9-5

shows the percentage allocations of SWP water to each contractor, based on Table A and the changes in allocations that would result. By far, the largest SWP agricultural water contractor is the Kern County Water Agency. Table 9-6 shows projected changes in deliveries to individual CVP contractors, derived from CALSIM II results. CALSIM modeling aggregates deliveries to various contractors, so it was necessary to manually disaggregate the modeling results to derive projected deliveries to individual CVP contractors.

Table 9-2. Comparison of Average Changes to SWP Table A Deliveries Resulting from Implementing the SDIP Alternatives by Water Year Type (thousand acre-feet)

	SWP Deliveries						
Water Year Type (1922–1994)	2001 Baseline	2001 Alt 2A	2001 Alt 2B. 3B, 4B	2001 Alt 2C	Change under Alt 2A	Change under Alt 2B, 3B, 4B	Change under Alt 2C
Wet	3,474	3,477	3,464	3,478	3	-10	4
Above normal	3,396	3,401	3,395	3,404	5	-2	7
Below normal	3,429	3,453	3,404	3,437	24	-25	8
Dry	2,791	2,837	2,752	2,804	46	-39	13
Critically Dry	1,720	1,747	1,703	1,718	27	-18	-3
73-Year Average	3,017	3,038	2,998	3,023	21	-19	6

Water Year Type (1922–1994)	2020 Baseline	2020 Alt 2A	2020 Alt 2B, 3B, 4B	2020 Alt 2C	Change under Alt 2A	Change under Alt 2B, 3B, 4B	Change under Alt 2C
Wet	3,824	3,828	3,812	3,828	4	-12	4
Above normal	3,707	3,737	3,703	3,740	30	-4	33
Below normal	3,567	3,611	3,548	3,617	44	-19	50
Dry	2,769	2,847	2,792	2,838	77	22	69
Critically dry	1,712	1,764	1,744	1,770	52	32	59
73-Year Average	3,180	3,219	3,183	3,220	39	3	40

Table 9-3. Comparison of Average Changes to CVP Deliveries Resulting from Implementing the SDIP Alternatives by Water Year Type (thousand acre-feet)

Water Year Type (1922–1994)	CVP Deliveries						
	2001 Baseline	2001 Alt 2A	2001 Alt 2B. 3B, 4B	2001 Alt 2C	Change under Alt 2A	Change under Alt 2B, 3B, 4B	Change under Alt 2C
Wet	3,115	3,315	3,142	3,153	200	28	39
Above normal	2,958	3,183	2,992	2,997	225	34	39
Below normal	2,779	2,885	2,815	2,813	106	36	34
Dry	2,425	2,408	2,425	2,427	-17	0	1
Critically Dry	1,701	1,709	1,708	1,707	8	8	6
73-Year Average	2,645	2,752	2,666	2,670	107	21	24

Water Year Type (1922–1994)	2020 Baseline	2020 Alt 2A	2020 Alt 2B, 3B, 4B	2020 Alt 2C	Change under Alt 2A	Change under Alt 2B, 3B, 4B	Change under Alt 2C
Wet	3,063	3,249	3,074	3,098	186	11	35
Above normal	2,863	3,063	2,879	2,886	200	16	23
Below normal	2,715	2,802	2,743	2,745	87	28	30
Dry	2,337	2,361	2,363	2,362	24	26	25
Critically Dry	1,714	1,703	1,704	1,703	-11	-10	-11
73-Year Average	2,588	2,689	2,603	2,611	101	15	23

Table 9-4. Comparison of Average Changes to Third-Party Transfer Capacity Resulting from Implementing the SDIP Alternatives by Water Year Type (thousand acre-feet)

	Transfer Capacity						
	2001 Baseline	2001 Alt 2A	2001 Alt 2B, 3B, 4B	2001 Alt 2C	Change under Alt 2A	Change under Alt 2B, 3B, 4B	Change under Alt 2C
73-Year Average Transfers (1922–1994)	250	343	349	353	93	99	103
7-Year Average Transfers (1928–1934)	497	549	542	550	52	45	53

Table 9-5. 2003 SWP Contractor Delivery Percentage

Region	Contractor	Percentage of Table A Deliveries	Alternative 2A		Alternative 2B, 3B, and 4B		Alternative 2C	
			2001 (taf)	2020 (taf)	2001 (taf)	2020 (taf)	2001 (taf)	2020 (taf)
North Bay Area (not exported from the Delta)	Napa County FC & WCD	0.7	0.14	0.27	0.1	0.02	0.04	0.28
	Solano County Water Agency	1.1	0.23	0.43	0.2	0.03	0.07	0.44
	Total	**1.8**	**0.37**	**0.71**	**0.3**	**0.1**	**0.11**	**0.72**
South Bay Area	Alameda County FC & WCD	1.9	0.39	0.74	0.4	0.06	0.11	0.76
	Alameda County Water District	1.0	0.21	0.39	0.2	0.03	0.06	0.40
	Santa Clara Valley Water District	2.4	0.50	0.94	0.5	0.07	0.14	0.96
	Total	**5.3**	**1.10**	**2.08**	**1.0**	**0.2**	**0.32**	**2.12**
Central Coast Area	San Luis Obispo County FC & WCD	0.6	0.12	0.24	0.1	0.02	0.04	0.24
	Santa Barbara County FC & WCD	1.1	0.23	0.43	0.2	0.03	0.07	0.44
	Total	**1.7**	**0.35**	**0.67**	**0.3**	**0.1**	**0.10**	**0.68**
San Joaquin Valley Area	Dudley Ridge Water District	1.4	0.29	0.55	0.3	0.04	0.08	0.56
	Empire West Side Irrigation District	0.07	0.01	0.03	0.0	0.00	0.00	0.03
	Kern County Water Agency	24.0	4.97	9.41	4.6	0.72	1.44	9.60
	County of Kings	0.1	0.02	0.04	0.0	0.00	0.01	0.04
	Oak Flat Water District	0.1	0.02	0.04	0.0	0.00	0.01	0.04
	Tulare Lake Basin Water Storage District	2.7	0.56	1.06	0.5	0.08	0.16	1.08
	Total	**28.3**	**5.86**	**11.09**	**5.4**	**0.9**	**1.70**	**11.35**
Southern California Area	Antelope Valley–East Kern Water Agency	3.4	0.70	1.33	0.6	0.10	0.20	1.36
	Castaic Lake Water Agency	2.3	0.48	0.90	0.4	0.07	0.14	0.92
	Coachella Valley Water District	0.6	0.12	0.24	0.1	0.02	0.04	0.24

Region	Contractor	Percentage of Table A Deliveries	Alternative 2A		Alternative 2B, 3B, and 4B		Alternative 2C	
			2001 (taf)	2020 (taf)	2001 (taf)	2020 (taf)	2001 (taf)	2020 (taf)
	Crestline–Lake Arrowhead Water Agency	0.1	0.02	0.04	0.0	0.00	0.01	0.04
	Desert Water Agency	0.9	0.19	0.35	0.2	0.03	0.05	0.36
	Little Rock Creek Irrigation District	0.1	0.02	0.04	0.0	0.00	0.01	0.04
	Mojave Water Agency	1.8	0.37	0.71	0.3	0.05	0.11	0.72
	Palmdale Water District	0.5	0.10	0.20	0.1	0.02	0.03	0.20
	San Bernardino Valley Municipal Water District	2.5	0.52	0.98	0.5	0.08	0.15	1.00
	San Gabriel Valley Municipal Water District	0.7	0.14	0.27	0.1	0.02	0.04	0.28
	San Gorgonio Pass Water Agency	0.4	0.08	0.16	0.1	0.01	0.02	0.16
	Metropolitan Water District of Southern California	48.2	9.98	18.89	9.2	1.45	2.89	19.28
	Ventura County Flood Control District	0.5	0.10	0.20	0.1	0.02	0.03	0.20
	Total	**61.9**	**12.81**	**24.26**	**11.8**	**1.9**	**3.72**	**24.80**
Feather River Area (not exported from the Delta)	City of Yuba City	0.2	0.04	0.08	0.0	0.01	0.01	0.08
	County of Butte	0.7	0.14	0.27	0.1	0.02	0.04	0.28
	Plumas County FC & WCD	0.06	0.01	0.02	0.0	0.00	0.00	0.02
	Total	**1.0**	**0.21**	**0.39**	**0.2**	**0.0**	**0.06**	**0.38**
State Water Project Total		**100**	**20.7**	**39.2**	**19.0**	**3.0**	**6.01**	**40.05**

FC & WCD = Flood Control and Water Conservation District.

Table 9-6. Estimated Changes in Average CVP Deliveries Occurring under Alternatives 2A, 2B, 2C, 3B, and 4B (thousand acre-feet)

		Alt 2A		Alt 2B, 3B, 4B		Alt 2C	
Beneficiary	Contractor Type	2001	2020	2001	2020	2001	2020
Westlands Water District	Agricultural Service	58	56	11.4	8.2	13	12.6
San Luis Water District	Agricultural Service	6	6	1.2	0.9	1.3	1.4
Panoche Water District	Agricultural Service	5	5	1	0.7	1.1	1.1
Other	Agricultural Service	24	22	4.7	3.2	5.4	5
Santa Clara Valley Water District	Municipal and Industrial	0	1	0	0.1	0	0.2
City of Tracy	Municipal and Industrial	0	0	0	0	0	0
San Benito County Water District	Municipal and Industrial	0	0	0	0	0	0
Kern-Tulare Irrigation District	Cross Valley Canal	4	3	0.8	0.4	0.9	0.7
Lower Tule River Irrigation District	Cross Valley Canal	3	3	0.6	0.4	0.7	0.7
Pixley Irrigation District	Cross Valley Canal	3	3	0.6	0.4	0.7	0.7
Other	Cross Valley Canal	4	3	0.8	0.4	0.9	0.7
Grasslands Water District	Refuge	0	0	0	0	0	0
San Luis National Wildlife Refuge	Refuge	0	0	0	0	0	0
Mendota Wildlife Management Area	Refuge	0	0	0	0	0	0
Exchange Contractors		0	0	0	0	0	0
Total		**107**	**101**	**21**	**15**	**24**	**23**

Note: "Other" includes other south-of-Delta water districts receiving CVP water. The major districts include Del Puerto Water District, Firebaugh Canal, and Broadview Water District.

Effects Resulting from Changes in Urban Land Use because of Increased Central Valley Project and State Water Project Deliveries

Making a connection between changes in the availability of water for urban uses resulting from implementing the SDIP and changes in growth patterns in particular jurisdictions (and the environmental impacts of that growth) is rather speculative.

While the allocations of any additional water made available by the SDIP to SWP and CVP contractors can be known, several of the SWP and CVP urban water contractors are water wholesalers who make independent decisions about which local jurisdictions or next-level wholesalers in their service area would receive additional water. Furthermore, these wholesalers may make allocations that vary over time depending on available supplies and shifting demands among retailers. Thus it is not possible to know where additional supplies from the export pumps would ultimately be delivered.

Further uncertainty is created by the following:

- Some contractors such as Metropolitan, the San Diego County Water Authority, and the Santa Clara Valley Water District have multiple sources of water that provide varying amounts of water over time or with varying reliability, making it difficult to determine whether an increment of additional SWP or CVP water would remove a barrier to growth or rather be put to use offsetting existing groundwater pumping or other surface water supplies.
- Some local jurisdictions have sufficient supplies to serve all projected growth in their general plans, so additional supplies would not induce or accommodate additional growth.
- Growth in some jurisdictions may be limited by water supplies but also may be constrained by other factors, such as the availability of land, utilities (such as sewer service and electrical service), transportation facilities, schools, wastewater treatment facilities or local growth management ordinances. These other factors may continue to limit growth, even if water supply reliability increases.
- Jurisdictions where growth is limited by water supply can attempt to obtain water from new sources if additional SWP water is not provided through this project.
- Some retailers and jurisdictions have the ability to store water during years when supplies are plentiful and hold it over to be used in years when supplies are scarce. This makes it more difficult to assess the growth-related effects of additional supplies for local jurisdictions.
- Local jurisdictions, not water suppliers, have control over land use decisions, both how much and where growth will occur. It would be extremely difficult to determine specific lands that would be developed as a result of the additional increment of water provided by the SDIP, and what resources would be affected by that additional growth.
- Local jurisdictions in southern California have typically based land-use planning on growth forecasts, which are usually based on factors such as demographic and economic forces, and not constrained by the availability of adequate water supplies (LSA Associates, Inc. 2003; EIP Associates 2004).

Some contractors, such as the Central Coast Water Authority, may rely solely on SWP supplies. The Santa Barbara/Goleta area and the area served by the Newhall County Water District are two examples of regions of California in which local governments have imposed limits on growth based on limits in their supply of water, and where additional water could lead to additional growth. While the Santa Barbara/Goleta area receives water from the SWP, the Monterey Peninsula area relies exclusively on local supplies. In areas that rely on the SWP or CVP and in which growth is limited by water supplies, providing additional water could lead to additional growth.

In summary, it would be remote, and speculative to identify specific pieces of land that would be developed and specific resource impacts that would occur as a

result of implementing the SDIP alternatives, and neither CEQA nor NEPA requires such an analysis if it is too remotely connected to the proposed project alternatives or too speculative. However, it is possible to describe, in general terms, the amount of additional water that could be provided to each SWP and CVP contractor as a result of operational changes stemming from implementing the SDIP and to roughly calculate maximum amount of new development that could be supported from the water provided to urban suppliers. Information supporting the third-party water transfer analysis comes from the transfer analysis presented in Section 5.1.

Therefore, the analysis of these effects will be limited to providing an assessment of the additional CVP and SWP supplies for M&I users that may result from implementing Alternative 2A and a general discussion of the total amount of growth that could occur and the types of effects that could result from that amount of additional growth.

Determining How Much Additional Water May Result from South Delta Improvements Program Implementation

Hydrologic modeling results were used to estimate increases in deliveries to SWP and CVP contractors for each alternative. The CALSIM II results compared deliveries occurring under baseline conditions to 2001 and 2020 deliveries for all water year types for all SDIP alternatives.

Determining How Much Additional Water Each State Water Project Contractor May Receive

The SWP has approximately 29 contractors.. The percentage breakdown of SWP deliveries to each of its contractors is provided in Table 9-5. Of the 29 contractors, Metropolitan is the largest. Metropolitan has 26 member agencies, including cities and municipal water districts (Table 9-7). Metropolitan supplies varying amounts to each of these member agencies ranging from 100% to 0% of their total supply (The Metropolitan Water District of Southern California 2003a). There are also 12 other contractors in southern California that receive water from the SWP (Table 9-3).

Table 9-7. The Metropolitan Water District of Southern California Member Agencies

Member Agency	Number of Water Purveyors Sold to	Percentage of Water Received from Metropolitan
Calleguas Municipal Water District	20	76
Central Basin Municipal Water District	28	35
City of Anaheim	0	25
City of Beverly Hills	0	100
City of Burbank	0	50
City of Compton	0	53
Eastern Municipal Water District	8	75
Foothill Municipal Water District	7	60
City of Fullerton	0	25
City of Glendale	0	85
Inland Empire Utilities Agency	7	30
Las Virgenes Municipal Water District	0	100
City of Long Beach	0	42
City of Los Angeles	0	30
Municipal Water District of Orange County	29	50
City of Pasadena	0	60
San Diego County Water Authority	24	25
City of San Fernando	0	0
City of San Marino	0	10–15
City of Santa Ana	0	25
City of Santa Monica	0	82
Three Valleys Municipal Water District	11	60
City of Torrance	0	92
Upper San Gabriel Valley Municipal Utility District	8	80
West Basin Municipal Utility District	12	20
Western Municipal Water District of Riverside County	9	24

Source: The Metropolitan Water District of Southern California 2003b.

Determining How Much Additional Urban Growth Could Occur

Additional growth that could be supported by the additional water supply described above was calculated using data from *The Regional Water Management Plan for The Metropolitan Water District of Southern California* (The Metropolitan Water District of Southern California 2000). Table A.1-13 from that document provides projected per capita demand within the

Metropolitan service area. These values range from 186 gallons per person per day in 2000 to 192 gallons per person per day in 2020. To be conservative, the lowest per capita value of 186 gallons per day was used. It should be noted that this value represents all water use, so it includes both household and employment-related consumption. The value of 186 gallons per person per day was converted to 0.2083 acre-feet per person per year. Finally this consumption number was divided into the additional water supply value to calculate the number of additional persons that could be supported.

This estimate is intended to provide an upper boundary to the level of impact that could occur, not to imply that this amount of growth would occur as a result of the project.

Effects Resulting from Additional Third-Party Water Transfers

Increased supplies could also result from third parties acquiring water north of the Delta and transferring it to south of the Delta using some of the increase in allowable pumping at the SWP export pumps. For third-party supply effects, the linkage is more speculative than for changes in CVP and SWP deliveries. While changes in allocations attributable to project supply effects can be determined, there is a great deal of uncertainty regarding how much of this capacity would be used, which agencies will use the capacity to increase their water supply, and by how much.

Although recent water transfer history may provide some information, it would be speculative to attempt to apply that to future land use decisions. Also, historically, most water transfers have been short-term (e.g., 1-year) agreements that do not provide enough certainty to remove a barrier to additional growth in water-short regions. While some of the export capacity may be taken up by long-term transfers, and some information about potential long-term north-to-south water transfers is available, determining the buyers and the ultimate destination of the water would be speculative.

A transfer analysis was prepared based on the amount of unused July-September pumping capacity as indicated by the CALSIM modeling conducted for SDIP. A detailed discussion of the water transfer analysis is provided in Chapter 5, “Water Supply and Management.”

Results

Construction-Related Effects

Over the duration of gate construction, approximately 140 jobs would be created directly under Alternatives 2A, 2B, 2C, and 3B and 120 jobs would be created

under Alternative 4B. This increase in employment is expected to cause the population in the project area to increase by approximately 190 people under Alternatives 2A, 2B, 2C, and 3B and 120 people under Alternative 4B. It is assumed that there are three persons per housing unit, and approximately 40 housing units would be needed to accommodate the increase in population during construction. Currently there are approximately 1,094,400 housing units in the three-county area; therefore, the increase in demand for housing attributable to the proposed project alternatives would be minimal and would be met by existing supplies.

Because the population in the project area is 3.1 million, this increase in population under each alternative would not be expected to cause housing or other economic development and, therefore, would not result in the project being considered growth-inducing.

Effects Resulting from Changes in Agricultural Land and Water Use because of Increased Central Valley Project and State Water Project Deliveries

Currently the CVP delivers approximately 7.0 maf per year to 253 contractors. Table 9-3 indicates that CVP deliveries under Alternative 2A; Alternatives 2B, 3B, and 4B; and Alternative 2C would increase on average approximately 107 taf, 21 taf, and 24 taf, respectively. The greatest increase in deliveries would be to Westlands Water District (Table 9-6).

Although the SDIP alternatives would result in additional water going to CVP contractors, this is not considered a growth inducing-impact for the following reasons:

- Water will be used to compensate for recent reductions of historical deliveries/supplies to CVP contractors.
- Water will be delivered to the same service areas and places of use as it has been historically.
- Water will be delivered in the same manner, physically identical, to past CVP deliveries.
- There will be no change in the contract amounts of CVP contractors.
- There are other sources of water available to some water districts.
- The largest amount of water being made available (Alternative 2A) is only an approximate 5% increase over the approximate 2.6-maf deliveries on average south of the Delta.

SWP delivers water mainly for M&I purposes but does deliver water to some agricultural water suppliers, principally KCWA. However, KCWA typically has enough water to meet its requirements, so additional supplies are not expected to

result in the conversion of any new lands to agriculture. Therefore, no agricultural growth inducement related to SWP contractors is expected. KCWA may bank and sell water to third-party SWP contractors. This is also not expected to result in agricultural growth inducement because it would not become a reliable source for these third-party contractors.

It should be acknowledged that the banking and transfer of water in the southern San Joaquin County is very complex. Therefore, some additional level of water transfers between SWP and CVP contractors could result from these increases in supplies. It would be remote and speculative to attempt to determine how much additional water could be transferred, and who the selling and receiving parties might be.

Effects Resulting from Changes in Urban Land Use because of Increased Central Valley Project and State Water Project Deliveries

Alternative 2A

As shown in Table 9-2, average SWP deliveries would increase under 2001 conditions by an average of 21 taf with implementation of Alternative 2A. Under 2020 conditions, deliveries would increase by an average of 39 taf.

Table 9-6 shows that no increase in CVP M&I deliveries is expected under 2001 conditions and a very minor increase is expected under 2020 conditions.

Based on the CALSIM II results, SWP M&I contractors would receive on average 15 taf of additional water. (Of this total, Metropolitan is expected to receive 10 taf of additional water during average and dry years. Other M&I users would receive 5 taf of additional water during average and dry years.)

The additional water that would be delivered to Metropolitan could go to any of its 26 member agencies. Determining the specific localities that would receive additional water or amounts of additional water delivered to each member agency would be highly speculative.

Based on an average per capita consumption of 0.208 acre-feet per person per year, the additional 15 taf of water could support approximately 72,000 additional people and their employment. It is not known, however, how much, if any, of this additional water would be allocated to new development.

Alternatives 2B, 3B, and 4B

Under Alternatives 2B, 3B, and 4B, average annual SWP deliveries would decrease under 2001 conditions by an average of 19 taf (Table 9-2). Under 2020 conditions, deliveries would increase by an average of 3 taf.

Table 9-6 shows that no increase in CVP M&I deliveries is expected under 2001 conditions, and a very minor increase is expected under 2020 conditions.

Based on the CALSIM II results, deliveries to SWP M&I contractors would be reduced by 14 taf. (Of this total, deliveries to MWD would be reduced by 9 taf.)

No growth-inducing impacts are expected under Alternatives 2B, 3B, and 4B because deliveries to M&I contractors would decrease under 2001 conditions and very slightly increase under 2020 conditions.

Alternative 2C

Under Alternative 2C, annual SWP deliveries would increase under 2001 by an average of 6 taf (Table 9-2). Under 2020 conditions, deliveries would increase by an average of 40 taf.

Table 9-6 shows that no increase in CVP M&I deliveries is expected under 2001 conditions and a very minor increase is expected under 2020 conditions.

Based on the CALSIM II results, SWP M&I contractors would receive on average 4.5 taf of additional water. (Of this total, MWD is expected to receive approximately 3 taf of additional water during average years.) Other M&I users would receive approximately 1.5 taf of additional water during average years.)

The additional water that would be delivered to MWD could go to any of its 26 member agencies. Determining the specific localities that would receive additional water or amounts of additional water delivered to each member agency would be highly speculative.

Based on an average per capita consumption of 0.208 acre-foot per person per year, the additional 4.5 taf of water could support approximately 21,600 additional people and their employment. It is not known, however, how much, if any, of this additional water would be allocated to new development.

Effects Resulting from Additional Third-Party Water Transfers

Potential increases in third-party water transfers under 2001 conditions are shown in Table 9-4, comparing the 2001 baseline to the 2001 for Alternative 2A;

Alternatives 2B, 3B, and 4B; and Alternative 2C. Under Alternative 2A, 76 taf more could be transferred during average years and 32 taf more could be transferred in dry years. Under Alternatives 2B, 3B, and 4B, 80 taf more could be transferred during average years and 32 taf more could be transferred in dry years. Under Alternative 2C, 77 taf more could be transferred during average years and 40 taf more could be transferred in dry years. Impacts associated with third-party water transfers would be nearly the same for all alternatives because the range of the increase in amount of water is very narrow (80 taf to 76 taf) among the alternatives.

The increase in the transfer capacity attributable to the SDIP is not expected to result in growth inducing impacts because the additional capacity would most likely be used to supplement existing supplies because transfers have historically been used to meet a short-term demand and do not remove a barrier to growth. In addition, the analysis of transfer-related impact in the area of use would be the responsibility of entities receiving the transferred water.

Impact Conclusions

Each alternative could remove an obstacle to growth. Although, the effects of the project, through the cultivation of once-fallowed agricultural lands or through the stimulation of the local economy by project construction, are not expected to accommodate or induce growth, the effects of the project, resulting from increases in water supplies for those receiving water exported from the Delta, could accommodate additional growth. This growth could result in the conversion of agricultural and other open land to urban uses that may adversely impact agricultural and biological resources (including special-status species and other sensitive resources) at those locations subject to such conversion. In addition this conversion could lead to changes in stormwater runoff quantity and quality, the modification of soils and slopes, and impacts on cultural resources. Increases in population could lead to impacts on air and water quality, traffic and noise conditions, and increases in the demand for such public services as schools, fire, police, sewer, solid waste disposal, and electrical and gas utilities. In addition, the expansion of such services could result in additional adverse impacts. Local jurisdictions could impose feasible mitigation measures on development that would reduce or eliminate these impacts, but as the location of any new growth cannot reasonably be predicted, estimating the potential for this would also be remote and speculative.

It would be extremely speculative to identify specific areas where growth could occur or the indirect effects on specific community service facilities in a particular service area. Overall, the potential exists that implementation of the SDIP could have some effect on growth and community facilities in service areas identified in Tables 9-5 and 9-7, but these effects, if they occur, would likely be extremely small, especially compared to other social and economic variables that can influence growth and services.

It is also possible that implementation of the SDIP could encourage or facilitate other activities that could result in growth-related effects. Because the SDIP is one of the key water conveyance projects identified in the CALFED ROD, it is conceivable that other possible water conveyance and storage projects could benefit or be facilitated by implementing the SDIP actions. Although conveyance and storage projects identified in the CALFED ROD are also independent actions that could be implemented with or without other proposed actions, these projects are clearly interrelated and have the potential to be complementary in improving SWP and CVP water supply reliability. Therefore, the SDIP may also be growth-inducing to the extent that the additional export capacity is used in the future to convey additional water supply from north-of-Delta storage facilities to south-of-Delta service areas. Because the amount and distribution of future water supplies are highly uncertain, the extent to which these potential growth effects could result in environmental impacts in service areas is considered too speculative to quantify.

Mitigation of these impacts, should they occur, would be the responsibility of the local jurisdictions in which the growth would occur, not DWR or Reclamation. The impacts of this growth, if any, would be (and in some cases have been) analyzed in detail either in general plan EIRs for the local jurisdictions or in project-level CEQA compliance documents. Mitigation measures could include locating the growth in areas where sensitive resources are absent, minimizing the loss of these resources, or replacing any loss.

Comparison of Alternatives

The analysis above addressed the growth-inducing impacts of each alternative. Tables 9-2, 9-3, and 9-4 provide a comparison of the changes in average SWP and CVP water deliveries and of third-party water transfers by water year type for Alternatives 2A; Alternatives 2B, 3B, and 4B; and Alternative 2C.

Increases in average deliveries would be greatest under Alternative 2A, reflecting a combined SWP Table A/CVP deliveries of 128 taf. Changes in average deliveries would be smallest under Alternatives 2B, 3B, and 4B, which reflected a combined SWP/CVP delivery of 2 taf. In some year types, primarily under Alternatives 2B, 3B, and 4B, deliveries actually would be expected to decrease compared to the 2001 and 2020 study baseline.

Alternative 2B would result in declines in CVP and SWP deliveries under 2001 study conditions, and only small increases in deliveries under 2020 study conditions. Alternative 2C would result in greater CVP and SWP deliveries, but less than the increase estimated for Alternative 2A. Over a 73-year averaging period, the SWP delivery increases would be less than that for Alternative 2A. It is expected that the agricultural and urban growth inducement potential and resultant impacts would be less under Alternatives 2B, 3B, and 4B and Alternative 2C than under Alternative 2A. Similarly, the capacity to facilitate

third-party water transfers under Alternatives 2B, 3B, and 4B and Alternative 2C would be roughly equivalent to that under Alternative 2A.

None of the alternatives is expected to result in growth-related effects during construction of the flow control gates because construction would be temporary and would result in a very small change in the population in the project area.

In summary, the growth-inducing impacts expected to occur under Alternative 2A would be greater than those under Alternatives 2B, 3B, and 4B and Alternative 2C because the largest increase in SWP and CVP deliveries would occur under Alternative 2C. Similarly, growth-inducing impacts under Alternative 2C would be greater than under Alternatives 2B, 3B, and 4B. The location and extent of the impacts of any growth induced by each alternative cannot be known at this time. Growth-related effects would be the responsibility of local jurisdictions to identify and mitigate.