34. Growth-inducing Impacts

34.1 Introduction

This chapter presents an analysis of the potential growth-inducing impacts of the Sites Reservoir Project (Project) action alternatives when compared to the Existing Conditions/No Project/No Action Condition. Both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) require consideration of project's potential for growth inducement as a possible way in which a project might result in indirect environmental effects.

34.1.1 NEPA Definition of Growth Inducement

The Council on Environmental Quality's regulations under NEPA require federal agencies to address the potential indirect impacts of a proposed action when evaluating the environmental impacts of a proposed action. Indirect effects are reasonably foreseeable effects that may occur beyond the immediate timeframe of the proposed action, or outside the immediate vicinity of the action area. These effects "may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate." (40 *Code of Federal Regulations* Section 1508.8[b]).

34.1.2 CEQA Definition of Growth Inducement

The *CEQA Guidelines* state that an environmental impact report (EIR) should discuss the ways in which a proposed project may induce growth (*CEQA Guidelines* Section 15126.2[d]). Growth inducement is defined under this provision as:

> *[T]he ways in which the proposed project could foster economic or population growth, or construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which would remove obstacles to population growth…. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment.*

A project can have a direct effect on population growth if it involves construction of substantial new housing. A project can also have an indirect potential for growth-inducement if it would: 1) establish substantial new permanent employment opportunities, which for example could result from a project that develops new or expanded commercial, industrial or governmental facilities that require workers; or 2) remove an obstacle to additional growth and development, such as removing a constraint to or increasing the capacity of a required public service.

34.1.3 Approach to Evaluation of Growth-inducing Impacts

Growth does not necessarily result from a single project or factor in a community. Rather, several factors affect the location, size, direction, timing, type, and rate of population growth, depending on the region where a given community is located. These factors include local government planning, availability of public services, natural resources, the economic climate, and political and environmental concerns. City and county planning agencies adopt and administer general and specific plans, zoning maps and ordinances, and other planning documents that contain policies and maps to identify the intensity and type of development that would be allowed in specific locations. As part of the local government development approval process, wholesale and retail water purveyors provide information on their current and future

ability to serve additional water users. However, local jurisdictions, rather than the wholesale or retail water purveyors, ultimately control development approval decisions.

Although local governments play a major role in growth management, the location and timing of growth also depends on a wide variety of factors. These include economic factors such as the availability and cost of developable land, local and national economic cycles, interest rates, and the demand for housing. Political factors include State and local laws that mandate businesses to comply with certain rules, regulations, and permitting requirements that address environmental and community concerns. Political decisions also impact growth, such as reducing property taxes as an incentive to attract businesses to certain communities. Quality of life issues such as crime, climate, air quality, traffic and commuting distances, as well as the availability, cost, and quality of community services (e.g., schools, transportation facilities, utilities including electricity, recreation facilities, and police and fire protection) can also influence the timing and location of population growth.

This chapter reviews the potential for the Project to induce growth under each of the action alternatives. In the Extended Study Area, the focus of the growth-inducement discussion is to the extent to which an alternative could provide additional water supplies to one or more water supply agencies that might support additional growth within the agency service areas. Although some Project alternatives would provide an increase in electrical generation capacity, the amount anticipated to be made available represents only a small fraction of total regional load and generation and is not considered potentially growth inducing in the Extended, Secondary, or Primary Study Areas. In the Primary Study Area, the focus of growth-inducement potential is related to employment opportunities in the Project vicinity that would be associated with the construction of the Project, long-term operation and maintenance of the facilities (water conveyance and storage facilities, recreational facilities, and road and bridge maintenance), and employment opportunities related to recreational-support activities in nearby communities.

In the Secondary Study Area, no construction activities or additional employment opportunities related to State Water Project (SWP) and Central Valley Project (CVP) facilities operations in the Secondary Study Area would occur, as described in Chapter 3 Description of the Sites Reservoir Project Alternatives. Therefore, no growth inducement potential is anticipated in the Secondary Study Area.

34.2 Environmental Impacts/Environmental Consequences and Growth-inducement Potential

34.2.1 Impact Assessment Assumptions and Methodology

The impact assessment is based upon a comparison of the model outputs for Alternatives A, B, C, and D to the model outputs for Existing Conditions/No Project/No Action Condition. Projected impacts to water supplies associated with the construction, operation, and maintenance for Alternative C_1 would be the same as Alternative C; therefore, Alternative C_1 is not discussed separately in this chapter. The assumptions associated with the Existing Conditions/No Project/No Action Condition are described in Chapter 2 Alternatives Analysis. Alternatives A, B, C, and D do not include construction of new housing; therefore, impact analysis did not evaluate direct growth inducement due to construction of new housing.

No construction activities or additional employment opportunities related to SWP and CVP facilities operations would occur in the Secondary Study Area and no growth inducement potential is anticipated. Therefore, there is no discussion of the Secondary Study Area below.

The evaluation of growth inducement in the Extended Study Area is based upon changes in water supply and water delivery reliability from proposed Project operations that result in additional water being available for CVP and SWP water users. The amount of water and the timing of its availability would vary, depending on the natural hydrology, reservoir operations, and the availability of conveyance capacity (see Chapter 6 Surface Water Resources). The effects of changes in water deliveries to agricultural and refuge water users were evaluated based upon differences between water deliveries as compared to deliveries related to the respective CVP and SWP water contract amounts. The effects of changes in water deliveries to municipal and industrial (M&I) water users participating in the Project were evaluated based upon water supply and demand information presented in participating agencies' urban water management plans (UWMPs) submitted to the Department of Water Resources (DWR) in 2015. State Water Code sections 10610-10656 requires retail water users with more than 3,000 water user accounts, or that serve more 3,000 acre-feet/year, to prepare and submit UWMPs to DWR every 5 years. The purpose of a UWMP is to describe and evaluate sources of supplies available to the municipal water users and identify reasonable and practical water efficiency measures, including water recycling and demand management. The UWMPs prepared in 2015 presented projected water demands and water supplies from 2015 through 2030 or 2035, including assumptions about projected availability of CVP and SWP water supplies through 2030. Table 34-1 summarizes information in the UWMPs submitted by the Project M&I participating agencies regarding their future (2030) water supplies and demands.

Table 34-1
Water Supply and Demand Estimates for Currently Participating Municipal and Industrial Water Agencies/Districts

	Supply (2030)		Demand (2030)	
	Normal Year (acre-feet/year)	Single Dry Year (acre-feet/year)	Average Year (acre-feet/year)	Single Dry Year (acre-feet/year)
City of American Canyon	8,470	3,825	6,328	6,328
Antelope Valley-East Kern Water Agency	124,550	46,750	85,670	85,920
Castaic Lake Water Agency	118,309	118,664	80,800	88,900
Coachella Valley Water District	157,700	157,700	157,700	157,700
Desert Water Agency	55,600	47,160	47,157	47,157
San Bernardino Valley Municipal Water District	352,552	342,227	270,747	276,613
San Gorgonio Pass Water Agency	20,700	5,474	20,400	5,500
Santa Clara Valley Water District	435,800	407,900	408,600	407,900
Alameda - Zone 7 Water Agency	99,500	78,200	89,500	48,500
Metropolitan Water District of Southern California	2,657,000	2,523,000	1,677,000	1,826,000

Source: Participating agency/district UWMPs

Until the California Water Commission completes its Water Storage Investment Program (WSIP) allocation review process and commits to an investment amount to be for public benefits (and the California water right and project permitting are more complete), it is not possible to precisely estimate how much water would be available for delivery to each of the currently participating water agencies/ districts. Once the California Water Commission completes its WSIP process, Project participating agencies/districts will be able to better predict how the Sites Reservoir Project would augment their water

supply and how the water would be used in their specific water service area. As shown in Section 6.3 Environmental Impacts/Environmental Consequences (in Chapter 6 Surface Water Resources), water supply augmentation is forecast to be small (nearly zero) in wet and above-normal years. Since the Project would be operated to store water in wetter years and then release that stored water in years when supply is more limiting and conveyance capacity is more available, deliveries to the M&I agencies would be greater in below-normal and dry years. Deliveries in critical years would be reduced (compared to dry years) due to a decrease in supply in those critical years. Table 34-2 identifies all current Sites Reservoir Project M&I participating agencies, the total quantity of water each entity has requested, and the relative percentage share of the overall anticipated deliveries to M&I participants.

Table 34-2
Quantity of Sites Reservoir Project Water Requested by M&I Participant

Agency/District	Requested Delivery Amount (acre-feet/year)	Percent of Total Requested Delivery Amount for All M&I Participants (South-of-Delta)
City of American Canyon[a]	4,000	N/A
Antelope Valley-East Kern Water Agency	2,000	1.12
Castaic Lake Water Agency	5,000	2.81
Coachella Valley Water District	26,500	14.89
Desert Water Agency	6,500	3.65
San Bernardino Valley Municipal Water District	30,000	16.85
San Gorgonio Pass Water Agency	14,000	7.87
Santa Clara Valley Water District	24,000	13.48
Alameda - Zone 7 Water Agency	20,000	11.24
Metropolitan Water District of Southern California	50,000	28.09
Total Delivery Amount Requested	**182,000[b]**	**100**

[a]The City of American Canyon receives the majority of its water supplies through the North Bay Aqueduct and is located north of the Delta.

[b]This total amount of water includes "Class II" water, a portion of which may not be available depending on the results of the WSIP application review and final amounts of water actually contracted for and taken by each entity. Thus, this total likely represents a conservative estimate of water potentially made to M&I participants.

Note:

N/A = not applicable

Source: Sites Project Authority, 2017 (Board meeting minutes).

For all alternatives discussed below it is not possible to determine how each water agency would use the increased water supply and increased water supply reliability from the Project. The majority of the M&I participants are requesting Project water to help offset the decreased reliability of SWP water. Some of the participating agencies may elect to use the additional water to accommodate anticipated planned growth over their entire service area or to support anticipated growth in a smaller, more focused area. Other participating agencies may elect to use the additional water to assist in restoring storage in their local groundwater aquifers (with or without a sustainable groundwater management plan) or to substitute their acquisition of higher-cost transfer water in years when surface water is not sufficient to meet their current or anticipated demands. Still other agencies may use the increased water supply to substitute for water sources found to be unsustainable or contaminated over the period of project implementation. The UWMPs for most agencies discuss the purchase of water transfers or increased use of groundwater in

drier years when imported water supplies are reduced. For agencies electing to manage their new water supply in this manner, it is anticipated that increased availability of total water supplies from the Project would generally result in a corresponding decrease in the purchase of water through transfers and/or reduced use of groundwater in drier years. As shown in alternative-specific analyses below, the total water supplies would not increase in wetter years. This would make it difficult to provide increased water supplies in all years to support growth without substantial increases in water supplies in wetter and drier years. Implementation of the Project would not improve infrastructure capacity or remove a regulatory constraint that had previously limited growth in the M&I water purveyors' service areas. However, increased deliveries to some participating SWP contractors that serve urban areas to meet their projected water supply deficit could be of sufficient quantity to potentially support additional anticipated growth. In this regard, the Project would not induce new growth but could assist in eliminating a potential obstacle to growth in urban areas that project a deficit, potentially allowing planned development to occur at a more rapid pace than would occur without the Project. For the majority of the other urban agencies participating in the Project, it is anticipated that additional Project water supplies would be used to reduce their reliance on other current water supplies, such as through transfers with willing sellers or reduced use of groundwater in drier or other years. For example, the Metropolitan Water District is currently requesting the potential for 50,000 acre-feet of water from the Project, which would represent less than 1 percent of the its current average annual water supply and less than 2 percent of its dry-year supply. This quantity of water is anticipated to increase the district's water supply reliability, but it would not be sufficient to promote additional growth. The potential for secondary impacts associated with such potential growth are discussed in the following sections.

34.2.2 Growth-inducing Impacts Associated with Alternative A

34.2.2.1 Extended Study Area

Growth inducement potential could be affected by construction of new facilities, major changes in the operation of existing facilities, or increased water supply reliability.

Potential for New Facilities or Changes in Operations of Existing Facilities

No new facilities would be constructed in the Extended Study Area; therefore, there would not be any potential for increased housing or employment associated with new facilities. Water storage in San Luis Reservoir under Alternative A generally would be similar or less than under the Existing Conditions/ No Project/No Action Condition; and operations would continue as under historical conditions, as described in Chapter 6 Surface Water Resources.

Therefore, implementation of Alternative A **would not result in direct growth inducement** in the Extended Study Area related to increased housing or employment as compared to the Existing Conditions/No Project/No Action Condition.

Changes in Water Supply Reliability

The evaluation of growth inducement in the Extended and Secondary study areas related to changes in water supply reliability was determined by considering: 1) the changes in water deliveries to CVP and SWP M&I, agricultural, and refuge water users over the long-term average and over dry and critical water years (see Chapter 6 Surface Water Resources); and 2) the extent of those changes related to use of other water supplies (e.g., groundwater).

Potential for Growth Inducement in Municipal Areas

Generally, the determination of the ability of a municipality to obtain water supplies for future housing and other growth is based upon the availability of long-term water supplies. During drier periods, municipal water users generally implement conservation, water recycling, and other water efficiency methods, as well as purchase water through water transfers with willing sellers, depending on availability. However, as those water efficient methods have become part of the overall water demand projections, the availability of water supplies in dry and critical water years also has become important, especially in areas where the number of water supplies are limited.

Over the long-term average and in dry and critical water years, CVP M&I water supplies under Alternative A would be similar to the current conditions. Therefore, there would be no potential for growth inducement associated with changes in deliveries of CVP water to M&I water users as compared to the Existing Conditions/No Project/No Action Condition.

Over the long-term average, SWP M&I water supplies under Alternative A also would be similar to current conditions. However, should new water supplies from the Project be shared based on the existing SWP Table A Amounts over dry and critical water years, average SWP water deliveries under Alternative A would increase to M&I water users in the Sacramento Valley (16 percent), San Francisco Bay Area (13 percent), Central Coast (14 percent), the Tulare Lake portion of the San Joaquin Valley (14 percent), the South Lahontan portion of the SWP Southern California service area (15 percent), and South Coast portion of the SWP Southern California service area (14 percent), as compared to the Existing Conditions/No Project/No Action Condition.

The increases in water supply deliveries (shared by existing Table A Amounts) to SWP water users under Alternative A as compared to the Existing Conditions/No Project/No Action Condition were compared to the total water supplies used by SWP water users in those areas, as presented in Table 34A-1 (in Appendix 34A Growth Inducing Considerations for Municipal and Industrial Water) and summarized in Table 34-3. The projections of total water supplies are based upon estimated availability of surface water supplies as well use of groundwater and recycled water.

Table 34-3
Summary of Changes in Water Supplies to Municipal and Industrial Water Users under Alternative A as Compared to the Existing Conditions/No Project/No Action Condition

Geographical Area	Changes in SWP Deliveries in Dry and Critical Water Years (acre-feet/year)	Percent Change in SWP Deliveries in Dry and Critical Water Years Compared to the Existing Conditions/ No Project/No Action Condition	Percent of Total Long-term Projected Water Supplies of SWP Water Users for Year 2030 (see Appendix 34A)
Sacramento Valley	3,000	16	1
San Francisco Bay Area	18,000	13	2
Central Coast	5,000	14	4
Tulare Lake portion of the San Joaquin Valley	9,000	14	7
South Lahontan portion of Southern California	30,000	15	9
South Coast portion of Southern California	141,000	14	2

Although the changes in SWP deliveries (shared by Table A Amounts) would increase under Alternative A as compared to the Existing Conditions/No Project/No Action Condition, the increased water deliveries would represent less than 10 percent in total water supplies (across the whole of the SWP service area) in the dry and critical water years and a minimal increase in the long-term average water supply. It is not possible to determine how each water agency would use the increased water supply in dry and critical water years. However, the UWMPs for most agencies describe purchasing of water transfers or increased use of groundwater in drier years when SWP water supplies are reduced to 5 to 30 percent of contract amounts. Therefore, it is anticipated that increased availability of total water supplies under Alternative A from the Project would generally result in a corresponding decrease in the purchase of water through transfers and/or reduced use of groundwater in drier years. As shown in Table 34-3, the total water supplies under Alternative A would not increase in wetter years, which would make it difficult to provide increased water supplies in all years to support growth without substantial increases in water supplies in wetter and drier years. Implementation of the Project would not improve infrastructure capacity or remove a regulatory constraint that had previously limited growth in the M&I water purveyors' service areas.

As previously discussed, increased deliveries to the current participating agencies that serve urban areas to meet their projected water supply deficit could be of sufficient quantity to potentially support additional anticipated growth. Table 34-4 displays the anticipated net changes in the water supply demand for each of the participating agencies related to water supplies under Alternative A for the long term and combined dry and critical year types. The water delivery values listed in Table 34-4 were estimated by calculating the proportionate share of the requested amount and then dividing the CALSIM II result for deliveries to the respective regions by the proportionate share. Participating M&I agencies, except the City of American Canyon, would receive deliveries from the Project that are conveyed down the Sacramento River and across the Delta. Many participating agencies are in the South Lahontan and South Coast portions of the SWP Southern California service area. The Santa Clara Valley Water District and Alameda-Zone 7 Water Agency (both located in the San Francisco Bay Area) would also receive deliveries included in the "South-of-Delta" totals identified in Table 34-2.

Table 34-4
Projected Difference Between Water Supply and Demand by Agency/District − Alternative A

Agency/District	Estimated Difference in Supply and Demand[a] (acre-feet/year)		Estimated Difference in Supply with Alternative A[b] (acre-feet/year)		Projected Total Supply and Demand Including Alternative A Supply (acre-feet/year)	
	Long Term	Dry and Critical Years	Long Term	Dry and Critical Years	Long Term	Dry and Critical Years
City of American Canyon	2,142	-2,503	1,000	1,595	3,142	-908
Antelope Valley-East Kern Water Agency	38,880	-39,170	820	1,023	39,700	-38,147
Castaic Lake Water Agency	37,509	29,764	2,051	2,558	39,560	32,322
Coachella Valley Water District	0	0	10,868	13,560	10,868	13,560
Desert Water Agency	8,443	-2,997	2,666	3,326	11,109	329
San Bernardino Valley Municipal Water District	81,805	65,614	12,303	15,351	94,108	80,965

Agency/District	Estimated Difference in Supply and Demand[a] (acre-feet/year)		Estimated Difference in Supply with Alternative A[b] (acre-feet/year)		Projected Total Supply and Demand Including Alternative A Supply (acre-feet/year)	
	Long Term	Dry and Critical Years	Long Term	Dry and Critical Years	Long Term	Dry and Critical Years
San Gorgonio Pass Water Agency	300	-26	5,742	7,164	6,042	7,138
Santa Clara Valley Water District	27,200	0	9,843	12,281	37,043	12,281
Alameda - Zone 7 Water Agency	10,000	29,700	8,202	10,234	18,202	39,934
Metropolitan Water District of Southern California	980,000	697,000	20,506	25,584	1,000,506	722,584

[a]Estimates based on individual agency/district UWMP 2030 projections and indicate difference between projected supplies and demands; positive numbers indicate supply is greater than demand, and negative numbers indicate demand exceeds supply.

[b]Delivery amounts are estimated by prorating the CALSIM M&I allocations by the ratio of the individual participant's total request.

Although it is not anticipated that the water made available from the Project would result in a direct increase in population or employment, the potential exists for the quantity of water made available by the Project could result in secondary effects of growth consistent with local general plans and regional growth projections in an agency's respective service area. It is uncertain precisely how Project water would be used, especially if the agency is currently experiencing water supply constraints, including decreasing availability of groundwater in their service area. As typical of most M&I water purveyors, the participating agencies are continuing to pursue new supplies including the Project, facility improvements, exchanges, purchases/water transfers, and conjunctive/groundwater storage facilities. For example, the San Gorgonio Pass Water Agency (SGPWA) has identified potential sources and actions to meet their project deficit, including the SWP, the East Branch Extension 2 Project, groundwater recharge basins, and a variety of specific infrastructure improvements and storage options (SGPWA, 2017). It is possible that the SGPWA will meet their future planned water demands to accommodate planned future growth through a combination of supplies, which may or may not include the quantity SGPWA is currently pursuing through the Project. The potential mix of supply sources and actual uses is expected to vary among the participating agencies.

At the local level, the increased population that is anticipated to result from anticipated growth could stimulate economic activity as a result of an increased demand for goods and services. This increased demand could cause an increase in employment and the associated need for housing. Where such demand and associated housing development would occur is unknown, other than areas identified in local general plans and planning documents. Assuming an increase in population in some areas that require additional housing, currently undeveloped land could be converted to urban uses or current urbanization could be intensified, which could have secondary (or indirect) environmental effects on the following:

- Special-status species and habitat
- Water quality and stormwater quality and quantity due to increased impervious surface cover
- Air quality
- Traffic and noise levels
- Public and utility levels of service

The specific environmental impacts associated with increased population are too speculative to predict or evaluate because the exact timing, location, and manner of potential future development within any specific participating agency's respective service areas is not yet known. Such potential impacts are addressed in the general plans and associated environmental documents completed within the given service area of such a water district or agency. However, secondary impacts could occur from the conversion of land to urban uses as well as increased population growth. Land that could be converted to urban uses includes lands along existing transportation routes on the fringes of current development. Such lands are typically undeveloped or used for agricultural purposes. Some agricultural lands can provide habitat; however, intensive agricultural uses (e.g., row crops and orchards) often provide minimal habitat. Conversion of such lands would eliminate most of the habitat value of these lands. Landform and drainage patterns often are also altered from natural drainage channels (assuming undeveloped lands are converted) to engineered stormwater and drainage systems. Development also results in an increase in impermeable surfaces such as roadways, parking lots, and homes/driveways that decrease groundwater recharge. Human activities associated with these facilities can lead to degradation of water and air quality as well as increases in traffic, noise levels, solid waste, and demands for local services.

Similarly, each of the Project participants is currently and will continue to seek a variety of water supply options and continued demand management actions to improve their overall water supply reliability, regardless of the Project. Demand management is a tool that will continue to be used by water agencies and individual water users as part of an integrated water management approach to water supply reliability regardless of whether or how the Project is implemented. Based on existing regulatory mandates as well as economic and environmental imperatives, state, regional, and local efforts will continue to improve water use efficiency over the efficiencies already achieved during the past few decades. Actions that bolster existing supply reliability to accommodate planned growth projections are evaluated by local planning agencies and vary by agency/district. In addition to water transfers, exchanges, and purchases as well as conjunctive groundwater recharge, storage, and use, other options that vary depending on the agency/district include wastewater reclamation and desalination, where feasible. Assuming that water transfers from agricultural entities could be made in the absence of unacceptable local impacts, such transfers are anticipated to be a continued primary source of supply. Such transfers often provide agricultural districts and users money to support continued capital improvements, including water management programs, and are generally less expensive for M&I water users than constructing new facilities to provide additional supply reliability.

The evaluation of growth inducement in the Primary Study Area is based upon anticipated changes in employment opportunities as compared to the Existing Conditions/No Project/No Action Condition and the potential for any increase in employment to result in growth inducement. Depending on the specific water supply-demand characteristics of the participating agencies and the eventual allocation of additional water provided by Alternative A, implementation of Alternative A **would not specifically induce new growth in any of the specific service areas but could assist in eliminating a potential obstacle to growth in urban areas that project a deficit**, potentially allowing planned development to occur at a more rapid pace than would occur without the Project as compared to the Existing Conditions/No Project/No Action Condition.

Potential for Growth Inducement in Agricultural Areas

Over the long-term average, CVP and SWP M&I water supplies under Alternative A would be similar to the Existing Conditions/No Project/No Action Condition.

Over the dry and critical water years, average CVP water deliveries under Alternative A would be similar to the Existing Conditions/No Project/No Action Condition, except for increases to agricultural water users in the Sacramento Valley and in the northern portion and Tulare Lake portions of the San Joaquin Valley by 11, 7, and 9 percent, respectively, as compared to the Existing Conditions/No Project/No Action Condition.

Over the dry and critical water years, SWP water deliveries under Alternative A would increase in the Tulare Lake portion of the San Joaquin Valley and South Coast portion of the SWP Southern California service area by 13 percent, each, as compared to the Existing Conditions/No Project/No Action Condition. Water deliveries in the remaining portions of the SWP service area would be similar under Alternative A and the Existing Conditions/No Project/No Action Condition.

All users of CVP and SWP water must use the water within the Place of Use designated by the State Water Resources Control Board (SWRCB) in the water rights issued to the Bureau of Reclamation (Reclamation) and DWR. The Place of Use was established in the agricultural areas based upon areas that have been historically irrigated by CVP and/or SWP water supplies. The CVP water users also must submit annual reports to Reclamation, indicating the types and extent of crop patterns with the amount of CVP water used to irrigate those crops.

As described in Chapter 10 Groundwater Resources, agricultural water users increase groundwater use in drier water years when CVP and SWP water deliveries decline as compared to the long-term average. In the San Joaquin Valley, this has resulted in substantial declines in groundwater elevations. In Southern California, many of the groundwater basins are operated in accordance with legal adjudications; therefore, the groundwater withdrawals are managed to avoid further long-term declines in groundwater elevations. In those areas, water transfers are purchased during drier years to continue agricultural operations, or fields are idled with employees laid off until adequate water supplies are available.

Under Alternative A, as described for municipal water users, the increased water supplies available in dry and critical water year types without a similar increase in long-term water supplies would not be adequate to support land use changes from agricultural to municipal uses that could support growth, even if those changes could occur within the regulations. However, increased surface water supplies in agricultural areas would result in less groundwater use, fewer water transfers, and less field idling. Therefore, it is determined that implementation of Alternative A **would not result in growth inducement** in the Extended Study Area due to improved agricultural water supply reliability as compared to the Existing Conditions/No Project/No Action Condition.

Potential for Growth Inducement Related to Refuge Water Supplies

Refuge water supplies would be similar under Alternative A and the Existing Conditions/No Project/ No Action Condition. However, the source of water supply would be changed from water transfers purchased under the CVP to water provided from the Project. Therefore, it is determined that implementation of Alternative A **would not result in growth inducement** in the Extended Study Area related to refuge water supplies because the total water supply would be similar to the Existing Conditions/No Project/No Action Condition.

34.2.2.2 Primary Study Area

Growth inducement potential could be affected by construction and operations of the new facilities, including operations of the recreational facilities.

Potential Growth Inducement Related to Increased Temporary and Permanent Employment

Implementation of Alternative A is expected to provide additional employment opportunities in the Primary Study Area for both construction and operation/maintenance of the Project facilities. Implementation of Alternative A could result in approximately 400 additional temporary jobs (primarily due to construction of the facilities pursuant to Alternative A) and 40 additional permanent jobs (primarily for the water supply facilities operation and recreational facilities) as compared to the Existing Conditions/No Project/No Action Condition (see Chapter 22 Socioeconomics).

The majority of the temporary jobs would be associated with construction. It is anticipated that most of the construction jobs would be filled from within the Primary Study Area. However, construction could require specialized skills not readily available in the local labor pool. As a result, it is anticipated that some of the non-local workers would travel from outside the two-county Primary Study Area. Considering the multi-year duration of construction, it is anticipated that 20 percent of the imported workers would relocate to the two-county region, adding to the local population. It is anticipated that all workers required for operation would relocate to the two-county region. This additional population from construction and operation would constitute a temporary and very minor increase in the total 2020 projected regional population of approximately 65,000 and would not pose a burden on local public services, utilities, or infrastructure. In addition, these jobs would represent substantially less than a one percent increase in the total labor force in the Primary Study Area as compared to the Existing Conditions/No Project/No Action Condition, as described in Chapter 22 Socioeconomics.

Most of the construction and operation workforce would most likely commute daily to the Project site from within the two-county region; however, if needed, there are approximately 2,000 available housing units to accommodate workers who may choose to commute to the Project site on a workweek basis or who may choose to relocate to the region, as described in Chapter 22 Socioeconomics. In addition to the available housing units, there are recreational vehicle parks within the two-county region to accommodate construction workers. As a result, construction and operation of Alternative A would not be expected to increase the demand for housing within the two-county region as compared to the Existing Conditions/ No Project/No Action Condition.

As described above and Chapter 22 Socioeconomics, construction and operation of Alternative A would be expected to result in a minor increase in jobs and population in the Primary Study Area, which could be accommodated within available housing units. An adequate housing supply exists to accommodate the change in population. Therefore, implementation of Alternative A **would not result in growth inducement** with respect to temporary and new project-related job growth as compared to the Existing Conditions/No Project/No Action Condition**.**

Potential Growth Inducement Related to Improved Recreational Opportunities

Implementation of Alternative A is expected to provide additional recreational opportunities within the Primary Study Area as compared to the Existing Conditions/No Project/No Action Condition. Total recreation visitation is anticipated to increase by approximately 200,000 annual visits, increasing non-local recreation expenditures to approximately $2.5 million (see Chapter 22 Socioeconomics). Expected increased recreation expenditures associated with implementation of Alternative A would represent less than 0.2 percent of total industrial expenditures in the Primary Study Area as compared to the Existing Conditions/No Project/No Action Condition. Therefore, implementation of Alternative A with respect to employment that supports recreational visitors is not anticipated to increase to a level that would require

additional housing; and implementation of Alternative A **would not result in growth inducement** as compared to the Existing Conditions/No Project/No Action Condition.

34.2.3 Growth-inducing Impacts Associated with Alternative B

34.2.3.1 Extended Study Area

Growth inducement potential could be affected by construction of new facilities, major changes in the operation of existing facilities, or increased water supply reliability.

Potential for New Facilities or Changes in Operations of Existing Facilities

Similar to Alternative A, under Alternative B no new facilities would be constructed in the Extended Study Area and San Luis Reservoir operations would be similar to the Existing Conditions/No Project/ No Action Condition. Therefore, implementation of Alternative B **would not result in direct growth inducement** in the Extended Study Area related to increased housing or employment as compared to the Existing Conditions/No Project/No Action Condition.

Changes in Water Supply Reliability

As was done for Alternative A, the evaluation of growth inducement in the Extended and Secondary study areas related to changes in water supply reliability was determined by considering: 1) the changes in water deliveries to CVP and SWP M&I, agricultural, and refuge water users over the long-term average and over dry and critical water years (see Chapter 6 Surface Water Resources); and 2) the extent of those changes related to use of other water supplies (e.g., groundwater), as described above for Alternative A.

Potential for Growth Inducement in Municipal Areas

Over the long-term average and in dry and critical water years, CVP M&I water supplies under Alternative B would be similar to the Existing Conditions/No Project/No Action Condition; therefore, there would be no potential for growth inducement associated with changes in deliveries of CVP water to M&I water users.

Over the long-term average, SWP M&I water supplies under Alternative B also would be similar to current conditions. However, should new water supplies from the Project be shared based on the existing SWP Table A Amounts over the dry and critical water years, average SWP water deliveries under Alternative B would increase to M&I water users in the Sacramento Valley (15 percent), San Francisco Bay Area (12 percent), Central Coast (14 percent), the Tulare Lake portion of the San Joaquin Valley (14 percent), the South Lahontan portion of the SWP Southern California service area (14 percent), and the South Coast portion of the SWP Southern California service area (13 percent), as compared to the Existing Conditions/No Project/No Action Condition.

The increases in water supply deliveries (shared by existing Table A Amounts) to SWP water users under Alternative B as compared to the Existing Conditions/No Project/No Action Condition were compared to the total water supplies used by SWP water users in those areas, as presented in Table 34A-1 (in Appendix 34A Growth Inducing Considerations for Municipal and Industrial Water) and summarized in Table 34-5. The projections of total water supplies are based upon estimated availability of surface water supplies as well use of groundwater and recycled water.

Table 34-5
Summary of Changes in Water Supplies to Municipal and Industrial Water Users under Alternative B as Compared to the Existing Conditions/No Project/No Action Condition

Geographical Area	Changes in SWP Deliveries in Dry and Critical Water Years (acre-feet/year)	Percent Change in SWP Deliveries in Dry and Critical Water Years Compared to the Existing Conditions/ No Project/No Action Condition	Percent of Total Long-term Projected Water Supplies of SWP Water Users for Year 2030 (see Appendix 34A)
Sacramento Valley	2,000	15	1
San Francisco Bay Area	17,000	12	2
Central Coast	4,000	14	3
Tulare Lake portion of the San Joaquin Valley	8,000	14	6
South Lahontan portion of Southern California	28,000	14	9
South Coast portion of Southern California	131,000	13	2

Although the changes in SWP deliveries (shared by Table A Amounts) would increase under Alternative B as compared to the Existing Conditions/No Project/No Action Condition, the increased water deliveries would represent less than 10 percent in total water supplies (across the whole of the SWP service area) in the dry and critical water years, and a minimal increase in the long-term average water supply. It is not possible to determine how each water agency would use the increased water supply in dry and critical water years. However, the UWMPs for most agencies describe purchasing of water transfers or increased use of groundwater in drier years when SWP water supplies are reduced to 5 to 30 percent of contract amounts. Therefore, it is anticipated that increased availability of total water supplies under Alternative B from the Project would generally result in a corresponding decrease in the purchase of water through transfers and/or reduced use of groundwater in drier years. As shown in Table 34-5, the total water supplies under Alternative B would not increase in wetter years, which would make it difficult to provide increased water supplies in all years to support growth without substantial increases in water supplies in wetter and drier years. Implementation of the Project would not improve infrastructure capacity or remove a regulatory constraint that had previously limited growth in the M&I water purveyors' service areas.

Similar to Alternative A and as previously discussed, increased deliveries to the current participating agencies that serve urban areas to meet their projected water supply deficit could be of sufficient quantity to potentially support additional anticipated growth. Table 34-6 displays the anticipated net changes in the water supply-demand for each of the participating agencies related to water supplies made available through the implementation of Alternative B for the long term and combined dry and critical year types. The water delivery values listed in Table 34-6 were estimated by calculating the proportionate share of the requested amount and then dividing the CALSIM II result for deliveries to the respective regions by the proportionate share. Participating M&I agencies, except the City of American Canyon, would receive deliveries from the Project that are conveyed down the Sacramento River and across the Delta. Many participating agencies are in the South Lahontan and South Coast portions of the SWP Southern California service area. The Santa Clara Valley Water District and Alameda-Zone 7 Water Agency (both

located in the San Francisco Bay Area) would also receive deliveries included in the "South-of-Delta" totals identified in Table 34-2.

Table 34-6
Projected Difference Between Water Supply and Demand by Agency/District – Alternative B

Agency/District	Estimated Difference in Supply and Demand[a] (acre-feet/year)		Estimated Difference in Supply with Alternative B[b] (acre-feet/year)		Projected Total Supply-Demand with Alternative B (acre-feet/year)	
	Long Term	Dry and Critical Years	Long Term	Dry and Critical Years	Long Term	Dry and Critical Years
City of American Canyon	2,142	-2,503	1,000	1,595	3,142	-908
Antelope Valley-East Kern Water Agency	38,880	-39,170	1,079	2,091	39,959	-37079
Castaic Lake Water Agency	37,509	29,764	2,697	5,228	40,206	34,992
Coachella Valley Water District	0	0	14,292	27,707	14,292	27,707
Desert Water Agency	8,443	-2,997	3,506	6,796	11,949	3,799
San Bernardino Valley Municipal Water District	81,805	65,614	16,180	31,366	97,985	96,980
San Gorgonio Pass Water Agency	300	-26	7,551	14,638	7,851	14,612
Santa Clara Valley Water District	27,200	0	12,944	25,094	40,144	25,094
Alameda - Zone 7 Water Agency	10,000	29,700	10,786	20,911	20,786	50,611
Metropolitan Water District of Southern California	980,000	697,000	26,966	52,277	1,006,966	749,277

[a]Estimates based on individual agency/district UWMP 2030 projections and indicate difference between projected supplies and demands; positive numbers indicate supply is greater than demand, and negative numbers indicate demand exceeds supply.

[b]Delivery amounts are estimated by prorating the CALSIM M&I allocations by the ratio of the individual participant's total request.

Similar to Alternative A, the specific environmental impacts of Alternative B associated with increased population are too speculative to predict or evaluate because the exact location of and manner of potential future development within any specific participating agency's respective service areas is not yet known. Such potential impacts are addressed in the general plans and associated environmental documents completed within the given service area of such a water agency/district. However, secondary impacts could occur from the conversion of land to urban uses, as well as increased population growth. Land that could be converted to urban uses includes lands along existing transportation routes on the fringes of current development. Such lands are typically undeveloped or are used for agricultural purposes. Some agricultural lands can provide habitat; however, intensive agricultural uses (e.g., row crops and orchards) often provide minimal habitat. Conversion of such lands would eliminate most of the habitat value of these lands. Landform and drainage patterns often are also altered from natural drainage channels

(assuming undeveloped lands are converted) to engineered stormwater and drainage systems. Development also results in an increase in impermeable surfaces such as roadways, parking lots, and homes/driveways that decrease groundwater recharge. Human activities associated with these facilities can lead to degradation of water and air quality as well as increases in traffic, noise levels, solid waste, and demands for local services. The same types of secondary impacts identified for Alternative A could occur as part of implementation of Alternative B.

The evaluation of growth inducement in the Primary Study Area is based upon anticipated changes in employment opportunities as compared to the Existing Conditions/No Project/No Action Condition and the potential for any increase in employment to result in growth inducement. Depending on the specific water supply-demand characteristics of the participating agencies and the eventual allocation of additional water provided by Alternative B, implementation of Alternative B **would not specifically induce new growth in any of the specific service areas but could assist in eliminating a potential obstacle to growth in urban areas that project a deficit**, potentially allowing planned development to occur at a more rapid pace than would occur without the Project as compared to the Existing Conditions/No Project/No Action Condition.

Potential for Growth Inducement in Agricultural Areas

Over the long-term average, CVP and SWP M&I water supplies under Alternative B would be similar to the Existing Conditions. Over the dry and critical water years, average CVP water deliveries under Alternative B would be similar to the Existing Conditions/No Project/No Action Condition. Over the dry and critical water years, SWP water deliveries under Alternative B would increase in the Tulare Lake portion of the San Joaquin Valley and South Coast portion of the SWP Southern California service area by 12 and 13 percent, respectively, as compared to the Existing Conditions/No Project/No Action Condition. Water deliveries in the remaining portions of the SWP service area would be similar under Alternative B and the Existing Conditions/No Project/No Action Condition.

All users of CVP and SWP water must use the water within the Place of Use designated by the State SWRCB in the water rights issued to the Reclamation and DWR. The Place of Use was established in the agricultural areas based upon areas that have been historically irrigated by CVP and/or SWP water supplies. The CVP water users also must submit annual reports to Reclamation, indicating the types and extent of crop patterns with the amount of CVP water used to irrigate those crops.

As described in Chapter 10 Groundwater Resources, agricultural water users increase groundwater use in drier water years when CVP and SWP water deliveries decline as compared to the long-term average. In the San Joaquin Valley, this has resulted in substantial declines in groundwater elevations. In Southern California, many of the groundwater basins are operated in accordance with legal adjudications; therefore, the groundwater withdrawals are managed to avoid further long-term declines in groundwater elevations. In those areas, water transfers are purchased during drier years to continue agricultural operations, or fields are idled with employees laid off until adequate water supplies are available.

Under Alternative B, as described for municipal water users, the increased water supplies available in dry and critical water year types without a similar increase in long-term water supplies would not be adequate to support land use changes from agricultural to municipal uses that could support growth, even if those changes could occur within the regulations. However, increased surface water supplies in agricultural areas would result in less groundwater use, fewer water transfers, and less field idling. Therefore, it is determined that implementation of Alternative B **would not result in growth inducement** in the

Extended Study Area due to improved agricultural water supply reliability as compared to the Existing Conditions/No Project/No Action Condition.

Potential for Growth Inducement Related to Refuge Water Supplies

Refuge water supplies would be similar under Alternative B and the Existing Conditions/No Project/ No Action Condition. However, the source of water supply would be changed from water transfers purchased under the CVP to water provided from the Project. Therefore, it is determined that implementation of Alternative B **would not result in growth inducement** in the Extended Study Area related to refuge water supplies because the total water supply would be similar to the Existing Conditions/No Project/No Action Condition.

34.2.3.2 Primary Study Area

Growth inducement potential could be affected by construction and operations of the new facilities, including operations of the recreational facilities.

Potential Growth Inducement Related to Increased Temporary and Permanent Employment

Implementation of Alternative B is expected to provide generally the same additional employment opportunities in the Primary Study Area as Alternative A for both construction and operation/maintenance of the Project facilities because, although the proposed reservoir size is smaller, it is anticipated to require similar construction efforts (see Chapter 22 Socioeconomics). Therefore, implementation of Alternative B is **would not result in growth inducement** with respect to temporary and new project-related job growth as compared to the Existing Conditions/No Project/No Action Condition**.**

Potential Growth Inducement Related to Improved Recreational Opportunities

Implementation of Alternative B is expected to provide similar additional recreational opportunities as Alternative A within the Primary Study Area as compared to the Existing Conditions/No Project/No Action Condition. Therefore, implementation of Alternative B with respect to employment that supports recreational visitors is not anticipated to increase to a level that would require additional housing; and implementation of Alternative B **would not result in growth inducement** as compared to the Existing Conditions/No Project/No Action Condition.

34.2.4 Growth-inducing Impacts Associated with Alternative C

34.2.4.1 Extended Study Area

Growth inducement potential could be affected by construction of new facilities, major changes in the operation of existing facilities, or increased water supply reliability.

Potential for New Facilities or Changes in Operations of Existing Facilities

Similar to Alternative A, under Alternative C no new facilities would be constructed in the Extended Study Area and San Luis Reservoir operations would be similar to the Existing Conditions/No Project/ No Action Condition. Therefore, implementation of Alternative C **would not result in direct growth inducement** in the Extended Study Area related to increased housing or employment as compared to the Existing Conditions/No Project/No Action Condition.

Changes in Water Supply Reliability

As was done for Alternative A, the evaluation of growth inducement in the Extended and Secondary study areas related to changes in water supply reliability was determined by considering: 1) the changes in water deliveries to CVP and SWP M&I, agricultural, and refuge water users over the long-term average and over dry and critical water years (see Chapter 6 Surface Water Resources); and 2) the extent of those changes related to use of other water supplies (e.g., groundwater), as described above for Alternative A.

Potential for Growth Inducement in Municipal Areas

Over the long-term average and in dry and critical water years, CVP M&I water supplies under Alternative C would be similar to the Existing Conditions/No Project/No Action Condition; therefore, there would be no potential for growth inducement associated with changes in deliveries of CVP water to M&I water users.

Over the long-term average, SWP M&I water supplies under Alternative C also would be similar to current conditions. However, should new water supplies from the Project be shared based on the existing SWP Table A Amounts over the dry and critical water years, average SWP water deliveries under Alternative B would increase to M&I water users in the Sacramento Valley (19 percent), San Francisco Bay Area (15 percent), Central Coast (17 percent), the Tulare Lake portion of the San Joaquin Valley (17 percent), the South Lahontan portion of the SWP Southern California service area (17 percent), and the South Coast portion of the SWP Southern California service area (14 percent), as compared to the Existing Conditions/No Project/No Action Condition.

The increases in water supply deliveries (shared by existing Table A Amounts) to SWP water users under Alternative C as compared to the Existing Conditions/No Project/No Action Condition were compared to the total water supplies used by SWP water users in those areas, as presented in Table 34A-1 (in Appendix 34A Growth Inducing Considerations for Municipal and Industrial Water) and summarized in Table 34-7. The projections of total water supplies are based upon estimated availability of surface water supplies as well use of groundwater and recycled water.

Table 34-7
Summary of Changes in Water Supplies to Municipal and Industrial Water Users under Alternative C as Compared to the Existing Conditions/No Project/No Action Condition

Geographical Area	Changes in SWP Deliveries in Dry and Critical Water Years (acre-feet/year)	Percent Change in SWP Deliveries in Dry and Critical Water Years Compared to the Existing Conditions/ No Project/No Action Condition	Percent of Total Long-term Projected Water Supplies of SWP Water Users for Year 2030 (see Appendix 34A)
Sacramento Valley	4,000	19	1
San Francisco Bay Area	21,000	15	2
Central Coast	5,000	17	4
Tulare Lake portion of the San Joaquin Valley	10,000	17	7
South Lahontan portion of Southern California	33,000	17	10
South Coast portion of Southern California	155,000	14	2

Although the changes in SWP deliveries (shared by Table A Amounts) would increase under Alternative C as compared to the Existing Conditions/No Project/No Action Condition, the increased water deliveries would represent less than 10 percent in total water supplies (across the whole of the SWP service area) in the dry and critical water years and a minimal increase in the long-term average water supply. It is not possible to determine how each water agency would use the increased water supply in dry and critical water years. However, the UWMPs for most agencies describe purchasing of water transfers or increased use of groundwater in drier years when SWP water supplies are reduced to 5 to 30 percent of contract amounts. Therefore, it is anticipated that increased availability of total water supplies under Alternative C from the Project would generally result in a corresponding decrease in the purchase of water through transfers and/or reduced use of groundwater in drier years. The total water supplies under Alternative C would not increase in wetter years, which would make it difficult to provide increased water supplies in all years to support growth without substantial increases in water supplies in wetter and drier years. Implementation of the Project would not improve infrastructure capacity or remove a regulatory constraint that had previously limited growth in the M&I water purveyors' service areas.

Similar to Alternative A and as previously discussed, increased deliveries to the current participating agencies that serve urban areas to meet their projected water supply deficit could be of sufficient quantity to potentially support additional anticipated growth. Table 34-8 displays the anticipated net changes in the water supply-demand for each of the participating agencies related to water supplies made available through implementation of Alternative C for the long term and combined dry and critical year types. The water delivery values listed in Table 34-8 were estimated by calculating the proportionate share of the requested amount and then dividing the CALSIM II result for deliveries to the respective regions by the proportionate share. Participating M&I agencies, except the City of American Canyon, would receive deliveries from the Project that are conveyed down the Sacramento River and across the Delta. Many participating agencies are in the South Lahontan and South Coast portions of the SWP Southern California service area. The Santa Clara Valley Water District and Alameda-Zone 7 Water Agency (both located in the San Francisco Bay Area) would also receive deliveries included in the "South-of-Delta" totals identified in Table 34-2.

Table 34-8
Projected Difference Between Water Supply and Demand by Agency/District – Alternative C

Agency/District	Estimated Difference in Supply and Demand[a] (acre-feet/year)		Estimated Difference in Supply with Alternative C[b] (acre-feet/year)		Projected Total Supply-Demand with Alternative C (acre-feet/year)	
	Long Term	Dry and Critical Years	Long Term	Dry and Critical Years	Long Term	Dry and Critical Years
City of American Canyon	2,142	-2,503	1,000	2,000	3,142	-908
Antelope Valley-East Kern Water Agency	38,880	-39,170	1,112	2,512	39,992	-36,658
Castaic Lake Water Agency	37,509	29,764	2,781	6,279	40,290	36,043
Coachella Valley Water District	0	0	14,739	33,280	14,739	33,280
Desert Water Agency	8,443	-2,997	3,615	8,163	12,058	5,166

Agency/District	Estimated Difference in Supply and Demand[a] (acre-feet/year)		Estimated Difference in Supply with Alternative C[b] (acre-feet/year)		Projected Total Supply-Demand with Alternative C (acre-feet/year)	
	Long Term	Dry and Critical Years	Long Term	Dry and Critical Years	Long Term	Dry and Critical Years
San Bernardino Valley Municipal Water District	81,805	65,614	16,685	37,675	98,490	103,289
San Gorgonio Pass Water Agency	300	-26	7,786	17,582	8,086	17,556
Santa Clara Valley Water District	27,200	0	13,349	30,141	40,549	30,141
Alameda - Zone 7 Water Agency	10,000	29,700	11,124	25,117	21,124	54,817
Metropolitan Water District of Southern California	980,000	697,000	27,809	62,792	1,007,809	759,792

[a]Estimates based on individual agency/district UWMP 2030 projections and indicate difference between projected supplies and demands; positive numbers indicate supply is greater than demand, and negative numbers indicate demand exceeds supply.

[b]Delivery amounts are estimated by prorating the CALSIM M&I allocations by the ratio of the individual participant's total request.

Similar to Alternative A, the specific environmental impacts of Alternative C associated with increased population are too speculative to predict or evaluate because the exact location of and manner of potential future development within any specific participating agency's respective service areas is not yet known. Such potential impacts are addressed in the general plans and associated environmental documents completed within the given service area of such a water district or agency. However, secondary impacts could occur from the conversion of land to urban uses and increased population growth. Land along existing transportation routes on the fringes of current development could be converted to urban uses. Such lands are typically undeveloped or are used for agricultural purposes. Some agricultural lands can provide habitat; however, intensive agricultural uses (e.g., row crops and orchards) often provide minimal habitat. Conversion of such lands would eliminate most of the habitat value of these lands. Landform and drainage patterns often are also altered from natural drainage channels (assuming undeveloped lands are converted) to engineered stormwater and drainage systems. Development also results in an increase in impermeable surfaces such as roadways, parking lots, and homes/driveways that decrease groundwater recharge. Human activities associated with these facilities can lead to degradation of water and air quality as well as increases in traffic, noise levels, solid waste, and demands for local services. The same types of secondary impacts identified for Alternative A could occur as part of implementation of Alternative C.

The evaluation of growth inducement in the Primary Study Area is based upon anticipated changes in employment opportunities as compared to the Existing Conditions/No Project/No Action Condition and the potential for any increase in employment to result in growth inducement. Depending on the specific water supply-demand characteristics of the participating agencies and the eventual allocation of additional water provided by Alternative C, implementation of Alternative C **would not specifically induce new growth in any of the specific service areas but could assist in eliminating a potential obstacle to growth in urban areas that project a deficit**, potentially allowing planned development to occur at a more rapid pace than would occur without the Project as compared to the Existing Conditions/No Project/No Action Condition.

Potential for Growth Inducement in Agricultural Areas

Over the long-term average, CVP and SWP M&I water supplies under Alternative C would be similar to the Existing Conditions. Over the dry and critical water years, average CVP water deliveries under Alternative C would be similar to the Existing Conditions/No Project/No Action Condition except for an increase in water deliveries in the Sacramento Valley and the Tulare Lake portion of the San Joaquin Valley by 10 and 6 percent, respectively. Over the dry and critical water years, SWP water deliveries under Alternative C would increase in the Tulare Lake portion of the San Joaquin Valley and South Coast portion of the SWP Southern California service area by 14 and 16 percent, respectively, as compared to the Existing Conditions/No Project/No Action Condition. Water deliveries in the remaining portions of the SWP service area would be similar under Alternative C and the Existing Conditions/No Project/No Action Condition.

All water users of CVP and SWP water must use the water within the Place of Use designated by the SWRCB in the water rights issued to the Reclamation and DWR. The Place of Use was established in the agricultural areas based upon areas that have been historically irrigated by CVP and/or SWP water supplies. The CVP water users also must submit annual reports to Reclamation, indicating the types and extent of crop patterns with the amount of CVP water used to irrigate those crops.

As described in Chapter 10 Groundwater Resources, agricultural water users increase groundwater use in drier water years when CVP and SWP water deliveries decline as compared to the long-term average. In the San Joaquin Valley, this has resulted in substantial declines in groundwater elevations. In Southern California, many of the groundwater basins are operated in accordance with legal adjudications; therefore, the groundwater withdrawals are managed to avoid further long-term declines in groundwater elevations. In those areas, water transfers are purchased during drier years to continue agricultural operations, or fields are idled with employees laid off until adequate water supplies are available.

Under Alternative C, as described for municipal water users, the increased water supplies available in dry and critical water year types without a similar increase in long-term water supplies would not be adequate to support land use changes from agricultural to municipal uses that could support growth, even if those changes could occur within the regulations. However, increased surface water supplies in agricultural areas would result in less groundwater use, fewer water transfers, and less field idling. Therefore, it is determined that implementation of Alternative C **would not result in growth inducement** in the Extended Study Area due to improved agricultural water supply reliability as compared to the Existing Conditions/No Project/No Action Condition.

Potential for Growth Inducement Related to Refuge Water Supplies

Refuge water supplies would be similar under Alternative C and the Existing Conditions/No Project/ No Action Condition. However, the source of water supply would be changed from water transfers purchased under the CVP to water provided from the Project. Therefore, it is determined that implementation of Alternative C **would not result in growth inducement** in the Extended Study Area related to refuge water supplies because the total water supply would be similar to the Existing Conditions/No Project/No Action Condition.

34.2.4.2 Primary Study Area

Growth inducement potential could be affected by construction and operations of the new facilities, including operations of the recreational facilities.

Potential Growth Inducement Related to Increased Temporary and Permanent Employment

Implementation of Alternative C is expected to provide generally the same additional employment opportunities in the Primary Study Area as Alternative A for both construction and operation/maintenance of the Project facilities. Therefore, implementation of Alternative C **would not result in growth inducement** with respect to temporary and new project-related job growth as compared to the Existing Conditions/No Project/No Action Condition**.**

Potential Growth Inducement Related to Improved Recreational Opportunities

Implementation of Alternative C is expected to provide similar additional recreational opportunities as Alternative A within the Primary Study Area as compared to the Existing Conditions/No Project/ No Action Condition. Therefore, implementation of Alternative C with respect to employment that supports recreational visitors is not anticipated to increase to a level that would require additional housing; and implementation of Alternative C would not result in growth inducement as compared to the Existing Conditions/No Project/No Action Condition.

34.2.5 Growth-inducing Impacts Associated with Alternative D

34.2.5.1 Extended Study Area

Growth inducement potential could be affected by construction of new facilities, major changes in the operation of existing facilities, or increased water supply reliability.

Potential for New Facilities or Changes in Operations of Existing Facilities

Similar to Alternative A, under Alternative D no new facilities would be constructed in the Extended Study Area and San Luis Reservoir operations would be similar to the Existing Conditions/No Project/No Action Condition. Therefore, implementation of Alternative D **would not result in direct growth inducement** in the Extended Study Area related to increased housing or employment as compared to the Existing Conditions/No Project/No Action Condition.

Changes in Water Supply Reliability

As was done for Alternative A, the evaluation of growth inducement in the Extended and Secondary study areas related to changes in water supply reliability was determined by considering: 1) the changes in water deliveries to CVP and SWP M&I, agricultural, and refuge water users over the long-term average and over Dry and Critical water years (see Chapter 6 Surface Water Resources); and 2) the extent of those changes related to use of other water supplies (e.g., groundwater), as described above for Alternative A.

Potential for Growth Inducement in Municipal Areas

Over the long-term average and in dry and critical water years, CVP M&I water supplies under Alternative D would be similar to the Existing Conditions/No Project/No Action Condition; therefore, there would be no potential for growth inducement associated with changes in deliveries of CVP water to M&I water users.

Over the long-term average, SWP M&I water supplies under Alternative D would be similar to current conditions. However, should new water supplies from the Project be shared based on the existing SWP Table A Amounts over the dry and critical water years, average SWP water deliveries under Alternative D

would increase to M&I water users in the Sacramento Valley, Central Coast, and Tulare Lake portion of the San Joaquin Valley by 7 percent, each, as compared to the Existing Conditions/No Project/No Action Condition.

The increases in water supply deliveries (shared by existing Table A Amounts) to SWP water users under Alternative D as compared to the Existing Conditions/No Project/No Action Condition were compared to the total water supplies used by SWP water users in those areas, as presented in Table 34A-1 (in Appendix 34A Growth Inducing Considerations for Municipal and Industrial Water) and summarized in Table 34-9. The projections of total water supplies are based upon estimated availability of surface water supplies as well use of groundwater and recycled water.

Table 34-9
Summary of Changes in Water Supplies to Municipal and Industrial Water Users under Alternative D as Compared to the Existing Conditions/No Project/No Action Condition

Geographical Area	Changes in SWP Deliveries in Dry and Critical Water Years (acre-feet/year)	Percent Change in SWP Deliveries in Dry and Critical Water Years Compared to the Existing Conditions/ No Project/No Action Condition	Percent of Total Projected Water Supplies of SWP Water Users for Year 2030 in Dry and Critical Water Years (see Appendix 34A)
Sacramento Valley	2,000	13	1
San Francisco Bay Area	16,000	3	2
Central Coast	4,000	13	3
Tulare Lake portion of the San Joaquin Valley	7,000	12	5
South Lahontan portion of Southern California	26,000	13	9
South Coast portion of Southern California	119,000	12	2

Although the changes in SWP deliveries (shared by Table A Amounts) would increase under Alternative D as compared to the Existing Conditions/No Project/No Action Condition, the increased water deliveries would represent less than 10 percent of the total water supply (across the whole of the SWP service area) in the dry and critical water years and a minimal increase in the long-term average water supply. It is not possible to determine how each water agency would use the increased water supply in dry and critical water years. However, the UWMPs for most agencies describe purchasing of water transfers or increased use of groundwater in drier years when SWP water supplies are reduced to 5 to 30 percent of contract amounts. Therefore, it is anticipated that increased availability of total water supplies under Alternative D from the Project would generally result in a corresponding decrease in the purchase of water through transfers and/or reduced use of groundwater in drier years. As shown in Table 34-9, the total water supplies under Alternative D would not increase in wetter years, which would make it difficult to provide increased water supplies in all years to support growth without substantial increases in water supplies in wetter and drier years. Implementation of the Project would not improve infrastructure capacity or remove a regulatory constraint that had previously limited growth in the M&I water purveyors' service areas.

Similar to Alternative A and as previously discussed, increased deliveries to the current participating agencies that serve urban areas to meet their projected water supply deficit could be of sufficient quantity to potentially support additional anticipated growth. Table 34-10 displays the anticipated net changes in the water supply-demand for each of the participating agencies related to water supplies made available through the implementation of Alternative D for the long term and combined dry and critical year types. The water delivery values listed in Table 34-10 were estimated by calculating the proportionate share of the requested amount and then dividing the CALSIM II result for deliveries to the respective regions by the proportionate share. Participating M&I agencies, except the City of American Canyon, would receive deliveries from the Project that are conveyed down the Sacramento River and across the Delta. Many participating agencies are in the South Lahontan and South Coast portions of the SWP Southern California service area. The Santa Clara Valley Water District and Alameda-Zone 7 Water Agency (both located in the San Francisco Bay Area) would also receive deliveries included in the "South-of-Delta" totals identified in Table 34-2.

Table 34-10
Projected Difference Between Water Supply and Demand by Agency/District – Alternative D

Agency/District	Estimated Difference in Supply and Demand[a] (acre-feet/year)		Estimated Difference in Supply with Alternative D[b] (acre-feet/year)		Projected Total Supply-Demand with Alternative D (acre-feet/year)	
	Long Term	Dry and Critical Years	Long Term	Dry and Critical Years	Long Term	Dry and Critical Years
City of American Canyon	2,142	-2,503	1,000	1,595	3,142	-908
Antelope Valley-East Kern Water Agency	38,880	-39,170	955	2,101	39,835	-37,069
Castaic Lake Water Agency	37,509	29,764	2,388	5,253	39,897	35,017
Coachella Valley Water District	0	0	12,654	27,840	12,654	27,840
Desert Water Agency	8,443	-2,997	3,104	6,829	11,547	3,832
San Bernardino Valley Municipal Water District	81,805	65,614	14,326	31,517	96,131	97,131
San Gorgonio Pass Water Agency	300	-26	6,685	14,708	6,985	14,682
Santa Clara Valley Water District	27,200	0	11,461	25,214	38,661	25,214
Alameda - Zone 7 Water Agency	10,000	29,700	9,551	21,011	19,551	50,711
Metropolitan Water District of Southern California	980,000	697,000	23,876	52,528	1,003,876	749,528

[a]Estimates based on individual agency/district UWMP 2030 projections and indicate difference between projected supplies and demands; positive numbers indicate supply is greater than demand, and negative numbers indicate demand exceeds supply.

[b]Delivery amounts are estimated by prorating the CALSIM M&I allocations by the ratio of the individual participant's total request.

Similar to Alternative A, the specific environmental impacts of Alternative D associated with increased population are too speculative to predict or evaluate because the exact location of and manner of potential future development within any specific participating agency's respective service areas is not yet known. Such potential impacts are addressed in the general plans and associated environmental documents completed within the given service area of such a water agency/district. However, secondary impacts could occur from the conversion of land to urban uses as well as increased population growth. Land that could be converted to urban uses includes lands along existing transportation routes on the fringes of current development. Such lands are typically undeveloped or are used for agricultural purposes. Some agricultural lands can provide habitat; however, intensive agricultural uses (e.g., row crops and orchards) often provide minimal habitat. Conversion of such lands would eliminate most of the habitat value of these lands. Landform and drainage patterns often are also altered from natural drainage channels (assuming undeveloped lands are converted) to engineered stormwater and drainage systems. Development also results in an increase in impermeable surfaces such as roadways, parking lots, and homes/driveways that decrease groundwater recharge. Human activities associated with these facilities can lead to degradation of water and air quality as well as increases in traffic, noise levels, solid waste, and demands for local services. The same types of secondary impacts identified for Alternative A could occur as part of the implementation of Alternative D.

The evaluation of growth inducement in the Primary Study Area is based upon anticipated changes in employment opportunities as compared to the Existing Conditions/No Project/No Action Condition and the potential for any increase in employment to result in growth inducement. Depending on the specific water supply-demand characteristics of the participating agencies and the eventual allocation of additional water provided by Alternative D, implementation of Alternative D **would not specifically induce new growth in any of the specific service areas but could assist in eliminating a potential obstacle to growth in urban areas that project a deficit**, potentially allowing planned development to occur at a more rapid pace than would occur without the Project as compared to the Existing Conditions/No Project/No Action Condition.

Potential for Growth Inducement in Agricultural Areas

Over the long-term average, CVP and SWP M&I water supplies under Alternative D would be similar to the Existing Conditions.

Over the dry and critical water years, average CVP water deliveries under Alternative D would be similar to the Existing Conditions/No Project/No Action Condition except for an increase in water deliveries in the Sacramento Valley by 7 percent.

Over the dry and critical water years, SWP agricultural water deliveries under Alternative D would be similar to the Existing Conditions/No Project/No Action Condition in all portions of the SWP service area.

All water users of CVP and SWP water must use the water within the Place of Use designated by the SWRCB in the water rights issued to Reclamation and DWR. The Place of Use was established in the agricultural areas based upon areas that have been historically irrigated by CVP and/or SWP water supplies. The CVP water users also must submit annual reports to Reclamation, indicating the types and extent of crop patterns with the amount of CVP water used to irrigate those crops.

As described in Chapter 10 Groundwater Resources, agricultural water users increase groundwater use in drier water years when CVP and SWP water deliveries decline as compared to the long-term average. In the San Joaquin Valley, this has resulted in substantial declines in groundwater elevations. In Southern

California, many of the groundwater basins are operated in accordance with legal adjudications; therefore, the groundwater withdrawals are managed to avoid further long-term declines in groundwater elevations. In those areas, water transfers are purchased during drier years to continue agricultural operations, or fields are idled with employees laid off until adequate water supplies are available.

Under Alternative D, as described for municipal water users, the increased water supplies available in dry and critical water year types without a similar increase in long-term water supplies would not be adequate to support land use changes from agricultural to municipal uses that could support growth, even if those changes could occur within the regulations. However, increased surface water supplies in agricultural areas would result in less groundwater use, fewer water transfers, and less field idling. Therefore, it is determined that implementation of Alternative D **would not result in growth inducement** in the Extended Study Area due to improved agricultural water supply reliability as compared to the Existing Conditions/No Project/No Action Condition.

Potential for Growth Inducement Related to Refuge Water Supplies

Refuge water supplies would be similar under Alternative D and the Existing Conditions/No Project/ No Action Condition. However, the source of water supply would be changed from water transfers purchased under the CVP to water provided from the Project. Therefore, it is determined that implementation of Alternative D **would not result in growth inducement** in the Extended Study Area related to refuge water supplies because the total water supply would be similar to the Existing Conditions/No Project/No Action Condition.

34.2.5.2 Primary Study Area

Growth inducement potential could be affected by construction and operations of the new facilities, including operations of the recreational facilities.

Potential Growth Inducement Related to Increased Temporary and Permanent Employment

Implementation of Alternative D is expected to provide generally the same additional employment opportunities in the Primary Study Area as Alternative A for both construction and operation/maintenance of the Project facilities. Therefore, implementation of Alternative C **would not result in growth inducement** with respect to temporary and new project-related job growth as compared to the Existing Conditions/No Project/No Action Condition**.**

Potential Growth Inducement Related to Improved Recreational Opportunities

Implementation of Alternative D is expected to provide similar additional recreational opportunities as Alternative A within the Primary Study Area as compared to the Existing Conditions/No Project/No Action Condition. Therefore, implementation of Alternative D with respect to employment that supports recreational visitors is not anticipated to increase to a level that would require additional housing; and implementation of Alternative D **would not result in growth inducement** as compared to the Existing Conditions/No Project/No Action Condition.

34.3 Mitigation Measures

Implementation of any of the alternatives would not specifically induce new growth in any of the specific service areas but could assist in eliminating a potential obstacle to growth in urban areas that project a deficit, potentially allowing planned development to occur at a more rapid pace than would occur without the Project as compared to the Existing Conditions/No Project/No Action Condition. Potential secondary impacts are identified above and anticipated to be addressed and mitigated to the extent possible by local planning agencies as part of existing general and specific plans and other related planning and environmental documents and authorizations.