

Chapter 8

Other Considerations Required by CEQANNEPA

8.1 Growth-Inducing Effects

8.1.1 Introduction

State CEQA Guidelines Section 15126.2(d) requires discussion of the potential growth-inducing effects of a project in an EIR. Based on the State CEQA Guidelines, growth is not assumed to be positive or detrimental; adverse impacts are assessed if the growth inducement associated with a project would result in significant adverse environmental impacts. In addition, as defined in the CEQ regulations at 40 CFR 1508.8(b), “growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate...” are included in the list of indirect effects to be evaluated in an EIS for a federal action.

The CEQA Guidelines require a discussion of growth inducement; but, the Guidelines do not require speculation as to exactly when and where growth may or may not occur, and what form that growth may take. Speculation does not provide the reader with accurate or useful information about the project's potential effects. The CEQA Guidelines also require a discussion of the ways in which a project could potentially foster economic or population growth or the construction of additional housing in the surrounding environment. These discussions should

include the characteristics of the project that may encourage or facilitate future growth that, either individually or cumulatively, could significantly affect the environment. Refer to Section 8.2 below for the discussion of economic growth.

The following discussions examine the issues of growth inducement from a federal policy perspective (i.e., delivery of Colorado River water); from a regional perspective (i.e., the CSP and potential barriers to growth); and from a local community perspective (i.e., increased housing development resulting from the Proposed Action and alternatives).

8.1.2 Recent Federal Actions Related to Water Supply and Growth

8.1.2.1 USFWS Biological and Conference Opinion

This section addresses recent federal policy regarding the issue of growth inducement for the region due to continued delivery of water from the Colorado River. Information for this section is provided by a March 4, 2005 memorandum from the USFWS entitled *Biological and Conference Opinion (BCO) on the Lower Colorado River (LCR) Multi-Species Conservation Program (MSCP), Arizona, California, and Nevada*. Although the focus of the BCO is the non-jeopardy determination for listed, candidate, or other covered species and critical habitat within the LCR MSCP, it provides conclusions that are relevant to this growth inducement analysis. Specifically, the BCO states “The covered actions do not result in more water being delivered to Arizona, California or Nevada or communities in those states where urban growth is expected to occur. Rather, the current amount of water delivered to these states will be continued under the LCR MSCP. Future changes in the use of LCR water, like in southern California, are unknown at this time. The analysis contained in the LCR MSCP Biological Assessment (BA) indicates that **growth would not be caused by continued delivery of LCR water (emphasis added)** due to a number of reasons, including the availability of other sources of water supply.”

The BCO further states “Urban growth and development is dependent upon any number of factors including national and regional economic conditions, climate, quality of life, and local employment opportunities. For example, if the economy in a community is depressed and employment opportunities are few, the continuing delivery of existing levels of LCR water to that community is not necessarily going to cause that community to grow. An example of this can be seen by looking at the demographic data for San Diego from the 1970s to the present that is cited in the BA. **Given the numerous factors that contribute to urban growth and development, there is no causal link between the continued provision of LCR water and urban growth in the states receiving LCR water (emphasis added).**”

8.1.2.2 Colorado River Quantitative Settlement Agreement

The Quantitative Settlement Agreement (QSA) and related agreements resolved several of the water supply issues confronting California and other Colorado River water rights holders, including Arizona and Nevada.

The primary issues involved were the over-allocation of the Colorado River entitlements, and the fate of the Salton Sea. Specifically, environmentalists were concerned that the habitats created by agricultural activity and water use in the Imperial Valley would shrink and jeopardize certain endangered species dependent on the Imperial Valley's water use if the Imperial Irrigation District (IID) changed the manner that it used its Colorado River water entitlements. IID was concerned that the costs of increasing the efficiency of water use and mitigating the environmental impacts of changes in water use were beyond the affordability of Imperial Valley water users. The QSA and related agreements created a consensual contractual framework to address these issues.

Negotiations for the QSA and related agreements commenced in the late 1980s, when IID and the Water Authority met to negotiate a conserved water transfer agreement. By 1998, IID and the Water Authority had approved the terms of the Water Authority/ IID Transfer Agreement; a long-term agreement for IID to generate and transfer conserved water to the Water Authority in exchange for a negotiated price formula, and subject to environmental review and mitigation, SWRCB approval and BOR consent. Many interested and potentially affected parties expressed concerns about the potential adverse impacts of the water transfer on their particular interests, and starting in mid-1998, negotiations for the QSA and Related Agreements commenced.

The SWRCB held several workshops, and hearings in 2002, and after lengthy briefing and argument, issued its decision in December 2002 approving the Water Authority/IID conserved water transfer, subject to certain environmental mitigation conditions. When agreement terms could not be resolved to the satisfaction of all contracting and approving entities by the end of 2002, the Secretary of Interior in December 2002 reduced IID's 2003 water order by almost 300,000 AF, and agreed to deliver that volume to MWD and the Coachella Valley Water District (CVWD). IID brought suit in January 2003, and by March 2003 had obtained a preliminary injunction restoring the IID 2003 water order. Negotiations re-commenced, and by October 2003, the QSA was in a form acceptable to, and approved by, all the contracting parties.

After the QSA decision was reached, the Water Authority and IID amended the 1998 conservation water transfer agreement. Under the terms of the amended agreement, IID will transfer water supplies conserved through improvements in irrigation efficiencies to the Water Authority in an amount beginning at 10,000 AF in 2003, and ultimately reaching a maximum of 200,000 AF in 2021. Lining portions of the Coachella and All-American Canals with concrete is another critical element of the QSA, and will conserve water lost due to seepage. The Water Authority will receive 77,700 AF of water annually for 110 years from the canal lining projects.

8.1.3 Direct Growth Analysis for the CSP

This section addresses the general issue of growth inducement for the CSP (direct impacts), irrespective of its location, in terms of removing a potential barrier to future growth. Information for this section is derived from the Program EIR (PEIR) for the Water Authority's Regional Water Facilities Master Plan. The Master Plan PEIR examines the relationship between water supply and land use planning, and describes the statutory and regulatory framework governing the provision of water on a regional basis. The CSP is one of a series of projects in the approved

Alternative 2 analyzed in the Master Plan for construction over a 27-year period. The Water Authority must respond to the needs of its member agencies. Therefore, the Master Plan is an inherently flexible plan.

As discussed in Section 1.2.3 (Introduction) of this EIR/EIS, the Water Authority and SANDAG entered into a 1992 MOA where the Water Authority “agrees to use SANDAG’s most recent RGF for planning purposes.” The MOA serves to ensure that there is “consistency between the plans, policies, and ordinances of the cities and County, and the plans and programs of the Water Authority.” The Water Authority utilizes SANDAG’s RGF to develop demand projections to be used in its water supply and facility planning. A detailed description of the methodology and key assumptions associated with this process can be found in the Master Plan PEIR (Section 18.2.2.5). The MOA ensures that the water demand projections for the San Diego region are linked with SANDAG’s RGF, and that water supply is a component of the overall growth management strategy and regional comprehensive planning efforts.

As stated above, the Water Authority has historically relied on SANDAG’s RGF to help it determine regional water supply requirements. Because the Water Authority does not have any land use approval authority, it can neither directly cause nor prevent growth. How and where development occurs in the Water Authority’s service area is dictated by the local land use agencies through their approval authority. Because the Water Authority delivers water on a regional basis in response to the demands of its member agencies, it would be speculative to try to determine if and where future growth will occur.

While lack of water is one of a number of potential barriers to the growth of an area, it is not a substantial barrier to growth within the Water Authority’s service area because member agencies have always met the needs of the customers in their service areas, and have always expected the Water Authority, as the region’s water wholesaler, to find the supplies to meet their needs. Member agencies have submitted their anticipated future water demands to the Water Authority and the Water Authority has responded through the implementation of CIP projects to increase water delivery and storage capacity.

The Master Plan PEIR concluded that implementation of the CIP projects would not result in direct growth-inducing effects, but could help remove an obstacle to future growth through the provision of additional water supplies. The CSP is a water storage project and not a “water supply” project; nevertheless, the “drought protection” aspects of CSP would remove an obstacle to future growth, but only to a limited extent.

As discussed in Section 1.2.4 (Introduction) of this EIR/EIS, the Water Authority is at risk for water shortages should the supplies identified in MWD’s IRP not be developed as planned or MWD invokes Section 135 of the Metropolitan Act, or the IID conservation transfer or canal lining supplies fail to materialize. To alleviate this risk, the Water Authority is pursuing the following options: (1) the development of storage, and (2) the development of additional seawater desalination. Storage opportunities include the development of local carryover storage facilities to accumulate and store water during periods of availability for use during dry water years. Therefore, the CSP alone is not expected to fully alleviate the effects of multiple dry-year

demand scenarios. Rather, the CSP, in combination with other water supply options, must be considered by the Water Authority to offset the effects of prolonged droughts in the region.

In terms of removing other obstacles to future growth, the CSP would not extend water service to any areas and would not remove an existing barrier to growth in any area of the county. Any future development projects within the county would be subject to review and approval by various jurisdictions with land use authority. Therefore, no direct relationship between the CSP and future growth has been established, and the CSP would not result in direct growth-inducing impacts.

8.1.4 Indirect Growth Analysis for Proposed Action and Alternatives

This section presents a summary of growth forecasts for the local community impact areas in the vicinity of the Proposed Action and alternatives, and the indirect growth inducement impacts (i.e., potential for construction of additional housing) in these areas due to implementation of the Proposed Action or its alternatives. The local community impact area for San Vicente Reservoir (under both the Proposed Action and the SV 50K component of the SV 50K/Moosa 50K Alternative) includes the communities of Lakeside, Poway, Ramona and Santee. The local community impact area for Moosa Canyon (under both the Moosa 100K Alternative and the Moosa 50K component of the SV 50K/Moosa 50K Alternative) includes the Valley Center Subregional Area 53 (SRA 53) as defined by SANDAG. This information was obtained from a community impact assessment prepared by CIC Research, Inc. (2007), which is included as Appendix H to this EIR/EIS.

8.1.4.1 Growth Forecasts

Tables 8.1-1 and 8.1-2 list the growth forecasts for the San Vicente Reservoir and Moosa Canyon local community impact areas. For comparative purposes, data are also listed for the City of San Diego and the San Diego County regions. As shown in Table 8.1-1, SANDAG forecasts that total employment for the San Vicente Reservoir local community impact area will increase by 50 percent during the 30-year period of 2000 to 2030. The Poway and Santee sub-region is developing a substantial economic base. Much of this economic growth is expected to occur in the southern Poway industrial area and the Santee Trolley Square/Santee Town Center areas. By comparison, employment in the County will only increase by 32 percent. However, housing (25 percent) and population (31 percent) growth for the San Vicente Reservoir local community impact area would be substantially less than the County-wide housing (30 percent) and population (37 percent) growth.

As shown in Table 8.1-2, Valley Center is a rural area with a population of less than 20,000 and 7,250 households in 2000; however, SANDAG forecasts that total population will increase 131 percent to 24,850, and households will increase by 120 percent to 8,700 units. Employment for the Moosa Canyon local community impact area will increase by 122 percent during the 30-year period of 2000 to 2030.

Table 8.1-1. Growth Forecasts for the San Vicente Local Community Impact Area and San Diego County

	2000	2010	2020	2030	2000-2030	
					Number	% Change
San Vicente Project Area ⁽¹⁾						
Total Population	219,562	239,069	259,895	287,995	68,433	31%
Total Housing Units	77,752	83,111	88,866	97,515	19,763	25%
Total Employment	74,926	86,977	100,089	112,238	37,312	50%
San Diego County						
Total Population	2,813,833	3,211,721	3,528,605	3,855,085	1,041,252	37%
Total Housing Units	1,040,149	1,166,094	1,254,647	1,354,088	313,939	30%
Total Employment	1,384,676	1,528,522	1,672,883	1,824,030	439,354	32%

⁽¹⁾ Lakeside, Poway, Ramona, and Santee SRAs (as defined by SANDAG)

Source: U.S. Census, SANDAG Final 2030 Cities/Counties/County Forecast (Feb 2004)

Table 8.1-2. Growth Forecasts for the Moosa Canyon Local Community Impact Area and San Diego County

	2000	2010	2020	2030	2000-2030	
					Number	% Change
Moosa Canyon Project Area ⁽¹⁾						
Total Population	18,959	23,290	29,572	43,812	24,853	131%
Total Housing Units	7,248	8,618	10,820	15,944	8,696	120%
Total Employment	4,287	5,854	8,145	9,499	5,212	122%
San Diego County						
Total Population	2,813,833	3,211,721	3,528,605	3,855,085	1,041,252	37%
Total Housing Units	1,040,149	1,166,094	1,254,647	1,354,088	313,939	30%
Total Employment	1,384,676	1,528,522	1,672,883	1,824,030	439,354	32%

⁽¹⁾ Valley Center SRAs (as defined by SANDAG)

Source: U.S. Census, SANDAG Final 2030 Cities/Counties/County Forecast (Feb 2004)

8.1.4.2 Indirect Impact Analysis

The CSP is designed to provide 100,000 AF of usable carryover storage capacity, which would help the region address the existing and projected demands for water that may result from extended periods of drought or catastrophic events. As evaluated in Section 8.2 below, over a five-year construction period the Proposed Action would generate an estimated 640 annual construction jobs, the Moosa 100K Alternative would generate an estimated 1,645 annual construction jobs, and the SV 50K/Moosa 50K Alternative would generate an estimated 1,663 annual construction jobs. However, the majority of the construction labor pool for these jobs would be generated from areas throughout San Diego County, with the remainder originating from southern Riverside County.

Due to a wide geographic variability in the County-wide construction sectors (e.g., residential, commercial, public works), the construction labor pool for the Proposed Action and alternatives would not necessarily come from the San Vicente Reservoir and Moosa Canyon local community impact areas. Overall, there would be no net impact on potential residential construction in the San Vicente Reservoir and Moosa Canyon local community impact areas to house these workers. Therefore, the indirect growth inducement impacts (i.e., potential for construction of additional housing) of the Proposed Action, the Moosa 100K Alternative, and the SV 50K/Moosa 50K Alternative would be less than significant.

8.1.4.3 Mitigation Measures

No significant impacts were identified for the Proposed Action, the Moosa 100K Alternative, and the SV 50K/Moosa 50K Alternative related to indirect growth inducement impacts (i.e., potential for construction of additional housing); therefore, no mitigation measures are required.

8.2 Socioeconomics/Environmental Justice

8.2.1 Introduction

Information for this section was obtained from a community impact assessment prepared by CIC Research, Inc. (2007), which is included as Appendix H to this EIR/EIS. The community impact assessment addresses existing conditions and impacts associated with the social (land use), economic, and environmental justice characteristics for the local community impact areas that would be affected by the Proposed Action and alternatives. The local community impact area for San Vicente Reservoir (under both the Proposed Action and the SV 50K component of the SV 50K/Moosa 50K Alternative) includes the communities of Lakeside, Poway, Ramona, and Santee. The local community impact area for Moosa Canyon (under both the Moosa 100K Alternative and the Moosa 50K component of the SV 50K/Moosa 50K Alternative) includes the Valley Center Subregional Area 53 (SRA 53) as defined by SANDAG. Refer to Sections 3.9, 4.9, and 5.9, respectively, of this EIR/EIS for a summary of the land use discussions from the community impact assessment as pertains to the Proposed Action and alternatives. This section addresses the economic and environmental justice discussions from the community impact assessment.

8.2.1.1 Methodology

The community impact assessment (Appendix H to this EIR/EIS) relied heavily on published data and field surveys to gain insight as to the potential impacts to residents and recreational lake users. Socioeconomic and demographic characteristics for the region and for the local community impact areas were pulled from published data sources such as the 2000 U.S. Census, SANDAG's 2005 population profile, and SANDAG's 2030 forecast estimates and demographic projections. The study was also based upon review and analysis of on-line property records, San Diego County Assessors maps, U.S. Census data, local economic publications, and numerous

other sources of published information. The study was also prepared using guidance from NEPA, the CEQ, and the Corps.

Field investigations for the SV 100K footprint were conducted on October 14, 2005, and on September 14 and October 21, 2006. During these surveys, CIC Research interviewed visitors and City personnel at San Vicente Reservoir. This survey data reinforced the available socioeconomic data from the 2000 U.S. Census and from other published sources. In addition, a field investigation for the Moosa 100K footprint was conducted on September 8, 2006.

The various data sources combined with the field investigations were used to assess the potential for community and environmental justice impacts, as well as supporting the identification of specific impact issues. For example, San Diego County Assessor's data was combined with the field surveys to identify the parcels and land uses that would be affected by the Proposed Action and alternatives. Each parcel was identified by assessor's parcel number, the property owner, parcel size, and land use.

To assess construction-related economic impacts, a San Diego regional input-output model was developed by CIC Research. The input-output modeling provides measurements of the total economic impacts (direct, indirect, and induced) in terms of output (regional sales), income (wage, salaries, and proprietors' income) and employment. There are many sectors that comprise the local economy, but only the retail sales sector generates retail sales tax revenues. In estimating retail sales tax impacts for the construction activities associated with the Proposed Action and alternatives, it is the expenditure of construction-related dollars throughout the local economy that comprise the indirect and induced economic outputs of the model in which retail sales tax revenues are calculated.

To assess environmental justice impacts, all federal agencies and departments are directed to comply with Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Population*, signed on February 11, 1994. EO 12898 focuses federal attention on the environmental and human health conditions in minority and low-income communities; enhances the provision of nondiscrimination in federal programs affecting human health and the environment; and promotes meaningful opportunities to access of public information, and participation in matters relating to minority and low-income communities and their environment. In addition, each federal agency is required to provide opportunities for community input in the NEPA process, including identifying potential effects and mitigation measures of proposed actions, programs or activities undertaken by them.

8.2.2 Socioeconomic Analysis for Proposed Action

Table 8.2-1 lists demographic data and forecasts for the San Vicente Reservoir local community impact area. For comparative purposes, data are also listed for the City of San Diego and the San Diego County region.

8.2.2.1 Existing Socioeconomic Conditions

This section describes the existing socioeconomic conditions within the San Vicente Reservoir local community impact area with respect to demographics, number of housing units and types, median personal income, economic character, and retail/business activity.

Demographics

As shown in Table 8.2-1, the San Vicente Reservoir local community impact area had a total estimated population of 232,758 in 2005. Of that total, the majority were reported as being white (76 percent), with a smaller Hispanic population (13 percent) than that of the City (27 percent) or County (29 percent). Nearly 9 out of 10 residents (86 percent) indicated that they only speak English at home, and only 9 percent speak Spanish at home.

Housing

The San Vicente Reservoir local community impact area had an estimated 81,426 housing units in 2005, principally composed of single-family residences (75.5 percent). The number of attached units (17 percent) is significantly lower in the San Vicente Reservoir local community impact area than in the City (41 percent) or County (35 percent); whereas, the percentage of mobile homes is much higher in the San Vicente Reservoir local community impact area (8 percent) than in the City (1 percent) or County (4 percent).

The majority of homes in the San Vicente Reservoir local community impact area are owner-occupied (70 percent), compared to 50 percent in the City and 55 percent in the County. Most of the homes (53 percent) were built between 1960 and 1979, and only 11 percent were built prior to 1960. The City and County have a significantly higher proportion of older homes that were built prior to 1960 (29 percent and 23 percent, respectively).

SANDAG's 2005 housing vacancy estimates indicated that 2.5 percent of the units were vacant in the San Vicente Reservoir local community impact area. Current vacancy rates for rental housing throughout the region are low (Table 8.2-1). The vacancy rate reported for the City of San Diego was 4.0 percent versus 4.3 percent for San Diego County. A rental vacancy rate below 5 percent indicates a tight housing market. Residents of the San Vicente Reservoir local community impact area reported a median household size of 2.9 people, compared to the City (2.7) and County (2.8).

The median value of owner-occupied housing in the San Vicente Reservoir local community impact area was \$482,000 in 2005, compared to \$480,000 for the City and \$500,000 for the County, as shown in Table 8.2-2. The average monthly residential rent for the San Vicente Reservoir local community impact area was \$979 in 2005, compared to \$1,158 for the City and \$1,107 for the County.

Table 8.2-1. Selected Population and Housing Characteristics for the San Vicente Reservoir Local Community Impact Area, City of San Diego, and San Diego County

Characteristic	Local Community Area ⁽¹⁾	City of San Diego	San Diego County
Population			
2000 Population (U.S. Census 2000)	219,562	1,223,400	2,813,833
2005 Population (SANDAG)	232,758	1,305,736	3,211,721
2030 Population Forecast (SANDAG)	287,995	1,656,820	3,855,085
Percent change (2005-2030)	23.7%	26.9%	20.0%
Gender (SANDAG 2005)			
Male	48.7%	50.0%	49.8%
Female	51.3%	50.0%	50.2%
Age Distribution (SANDAG 2005)			
Under 5 years	6.2%	7.1%	7.3%
5 to 19	23.1%	20.1%	21.1%
20 to 34	17.4%	24.9%	23.1%
35 to 54	32.2%	29.1%	28.7%
55 to 64	10.5%	8.5%	8.8%
65+	10.5%	10.3%	11.0%
Median Age (SANDAG 2005)	37.4	33.8	34.0
Income and Poverty Levels			
Median Household Income (SANDAG 2005)	\$60,941	\$50,415	\$52,192
Families Below Poverty (U.S. Census 2000)	4.6%	10.6%	8.9%
Population Below Poverty (U.S. Census 2000)	6.3%	14.6%	12.4%
Education			
Population 25+ yrs. College Grad. (U.S. Census 2000)	24.1%	35.0%	29.6%
Population 18-24 Enrolled in Coll. (U.S. Census 2000)	36.6%	45.4%	35.9%
Race (SANDAG 2005)			
Non-Hispanic	87.2%	73.2%	71.2%
American Indian and Alaska Native	0.7%	0.3%	0.5%
Asian & Pacific Islander	5.7%	15.5%	10.3%
Black or African American	1.6%	7.1%	5.3%
White	76.2%	46.6%	51.6%
Other or Multiple Race	3.1%	3.7%	3.4%
Hispanic	12.8%	26.8%	28.8%
Language Spoken at Home (U.S. Census 2000)			
English Only	85.8%	64.1%	67.0%
Spanish	8.5%	18.9%	20.1%
Asian Pacific Language	2.8%	10.4%	7.3%
Other Language	2.8%	6.7%	5.6%
Housing Units			
2000 Housing Units (U.S. Census 2000)	77,752	469,689	1,040,149
2005 Housing Units (SANDAG 2005)	81,426	495,378	1,108,500
2030 Housing Forecast (SANDAG 2005)	97,515	604,399	1,354,088

Characteristic	Local Community Area⁽¹⁾	City of San Diego	San Diego County
Percent Change (2000-2005)	4.7%	5.5%	6.6%
Percent Change (2000-2030)	25.4%	28.7%	30.2%
Total Occupied Units	79,656	475,552	1,061,027
Owner Occupied Housing (U.S. Census 2000)	70.0%	49.5%	55.4%
Renter Occupied Housing (U.S. Census 2000)	30.0%	50.5%	44.6%
Housing Unit Type (SANDAG 2005)	100%	100%	100%
Single Family Residence (detached)	75.5%	58.3%	61.2%
Attached Units	16.5%	40.6%	34.7%
Mobile Homes and Other	8.0%	1.1%	4.2%
Persons/Dwelling Unit (SANDAG 2005)	2.9	2.7	2.8
Average Rent (Fall 2005 S.D. Apt. Assn.)	\$979	\$1,158	\$1,107
Median Housing Value (Dataquick, Inc. 2005)	\$482,000	\$480,000	\$500,000
Housing Vacancy Rates (SANDAG 2005)	2.5%	4.0%	4.3%
Year Built (U.S. Census 2000)	100%	100%	100%
2000 to 2006	N/A	N/A	N/A
1990 to 2000	12.0%	12.3%	13.9%
1980 to 1989	24.1%	19.6%	21.9%
1960 to 1979	53.3%	39.4%	41.3%
1940 to 1959	9.3%	21.0%	17.8%
1939 or earlier	1.3%	7.7%	5.1%
Unemployment Rate (Calif. EDD) (persons 16 years or over)	3.2%	4.4%	4.3%
Total Employment 2005 (Calif. EDD)	75,500	777,600	1,471,000
Total Employment 2030 Forecast (SANDAG 2005)	112,238	975,990	1,824,030
Employment percent change (2005-2030)	48.7%	25.5%	24.0%
Occupation (U.S. Census 2000)	100%	100%	100%
Management, professional, and related occupations	35.3%	41.8%	37.7%
Service occupations	14.8%	15.9%	16.1%
Sales and office occupations	29.1%	26.4%	27.2%
Farming, forestry and fishing occupations	0.3%	0.2%	0.5%
Construction, extraction, and maintenance occupations	11.4%	6.7%	8.7%
Production, transportation, and material occupations	9.1%	9.0%	9.9%

⁽¹⁾ Poway, Ramona, Lakeside, and Santee SRAs as defined by SANDAG.

Source: 2000 U.S. Census unless otherwise indicated.

Table 8.2-2. Median Home Sales Price San Vicente Reservoir Local Community Impact Area, City of San Diego and San Diego County

County/City/Area	2005		2004		% Change in Units Sold	\$ Change in Median Price
	# Sold	Median Price	# Sold	Median Price		
Lakeside (92040)	539	\$434,000	617	\$349,000	-13%	24%
Poway (92064)	707	\$555,000	830	\$469,000	-15%	18%
Ramona (92065)	680	\$523,000	741	\$480,000	-8%	9%
Santee (92071)	988	\$429,000	1,013	\$392,000	-2%	9%
City of San Diego	19,970	\$480,000	20,608	\$450,000	-3%	7%
San Diego County	49,998	\$500,000	53,455	\$460,000	-6%	9%

Source: Dataquick Inc., Dqnews.com, CA Home Sales Activities by City, YTD 2004-2005

Personal Income

The estimated median household income in 2005 was \$60,941 for the San Vicente Reservoir local community impact area, which is substantially higher than the median income for the City (\$50,415) or the County (\$52,190). Only 5 percent of the San Vicente Reservoir local community impact area residents were below the poverty level in 2000, as compared to 11 percent in the City and 9 percent in the County.

Economic Character

Refer to Appendix H to this EIR/EIS for a detailed discussion of the San Diego County regional economy. The retail sales tax rate for taxable sales originating within the San Vicente Reservoir local community impact area is 7.75 percent. The retail sales tax is administered by the State of California, Board of Equalization. One cent of the 7.75-cent sales tax revenue is returned to the general fund of the respective city or county in which the taxable retail purchase occurred, and is used for the local area revenue analysis in this section. The balance of the 7.75-cent sales tax is allocated primarily to the state (6.25 cents) and to designated regional transportation and safety program funds (0.5 cents). Retail sales in San Diego County have grown from \$36.2 billion in 2000 to \$46.7 billion in 2005 representing an increase of 29 percent (Table 8.2-3). The City of Poway and the City of Santee both recorded larger increases in retail sales over the last 5 years (77 percent and 43 percent). Total sales were \$1.2 billion in Poway and \$709 million in Santee in 2005.

Retail/Business Activity

Retail/business activity within the SV 100K study area does not exist. The concessions at San Vicente Marina closed in early summer 2006. No timeline has been set by the City for reopening the concession operation under a private operator. The nearest retail businesses are located a few miles south of San Vicente Reservoir at Los Coches Road and Woodside Avenue in Santee.

Table 8.2-3. Taxable Retail Sales in San Diego County, City of San Diego and Portions of San Vicente Reservoir Local Community Impact Area

Year	All Taxable Retail Sales							
	San Diego County		City of San Diego		City of Poway		City of Santee	
	Sales (\$000s)	Percent Change	Sales (\$000s)	Percent Change	Sales (\$000s)	Percent Change	Sales (\$000s)	Percent Change
2000	\$36,245,418	10.7%	\$16,099,193	11.1%	\$664,118	N/A	\$495,083	N/A
2001	\$37,699,333	4.0%	\$16,371,512	1.7%	\$712,327	7.3%	\$501,151	1.2%
2002	\$38,595,547	2.4%	\$16,625,855	1.6%	\$767,375	7.7%	\$523,519	4.5%
2003	\$40,863,978	5.9%	\$17,465,362	5.0%	\$889,578	15.9%	\$592,000	13.1%
2004	\$44,470,338	8.8%	\$18,538,443	6.1%	\$1,075,622	20.9%	\$658,775	11.3%
2005	\$46,679,471	5.0%	\$19,491,746	5.1%	\$1,174,167	9.2%	\$708,885	7.6%
Percent Change (2000-2005)		28.8%		21.1%		76.8%		43.2%

N/A = Not Applicable

Retail sales data is not available for the City of Lakeside and Ramona

Source: California State Board of Equalization, 2006

8.2.2.2 Impact Analysis

The following section evaluates impacts of the Proposed Action on the economic and environmental justice characteristics within the San Vicente Reservoir local community impact area.

Methodology

Significance thresholds or standards for socioeconomic impacts are not generally provided under federal (NEPA) and state (CEQA) guidelines, with the exception of farmland impact guidelines under the Farmland Protection Policy Act. Pursuant to Sections 15064(e) and 15131(a) and (b) of the State CEQA Guidelines, “Economic or social effects of a project shall not be treated as significant effects on the environment,” but “may be used to determine the significance of physical changes caused by the project.” As defined in Section 1508.14 of the CEQ Regulations for Implementing NEPA, “economic or social effects are not intended by themselves to require preparation of an environmental impact statement. When an environmental impact statement is prepared and economic or social and natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment.”

Analysis of environmental justice impacts considers where minorities are located relative to a federal action. Federal agencies responsible for project-specific permitting and funding approvals generally consider the following factors to determine the degree of environmental degradation to minority and low-income populations:

- Whether the federal action will result in environmental degradation in minority and low-income populations and, if so, whether such impacts are disproportionate compared to the population at large.
- Whether a project located in or near a low-income community allows members of that community to share in the economic benefits of the federal action.
- Whether the federal action, during its environmental analysis, construction and operation, encourages effective public/community participation in the environmental review and decision-making processes as part of project implementation.

Economic Impacts

This section assesses potential impacts of the Proposed Action on the economic activity in the San Vicente Reservoir local community impact area, including fiscal impacts on local taxing agencies (direct loss of property tax and retail sales tax revenues), property value changes (business relocations, employment losses, and disruption of access to businesses), displacement of construction labor and materials, and loss of farmlands and recreational opportunities.

Direct Loss of Property Tax Revenues

Fiscal impacts include both direct and indirect effects on local jurisdictions and taxing agencies. Direct impacts are related to property acquisitions, which convert private property to a publicly owned, non-taxable land use. Indirect impacts refer to project-induced economic impacts from development or project-related changes in market value, as well as properties that lose access or are converted into small, economically non-viable remnants, as a result of a partial taking of property.

The potential acquisition of private property for the Proposed Action would directly affect the property tax revenues of the County. The County Tax Assessor's total property tax assessment for Fiscal Year 2005-06 was \$3.594 billion. For purposes of this analysis, up to 30 privately owned parcels surrounding San Vicente Reservoir could be affected by the septic system setback requirements (Table 8.2-4). This estimate is provided herein for purposes of environmental analysis only. The Water Authority will conduct detailed evaluations of private properties around the reservoir that may be affected by septic system setback requirements, taking into consideration intervening slope and topography should the Proposed Action be approved. Therefore, any discussion of potential full or partial property takes in this section should be considered very preliminary.

Of the 30 private parcels potentially affected by septic system setbacks, 12 parcels may require full acquisition (i.e., potential "full-takes") and could total 44.4 hectares (109.9 acres) being removed from the property tax roll. This could result in an estimated direct loss of \$32,840 in annual property tax. In addition, portions of 18 privately owned parcels surrounding the reservoir that could potentially be affected by partial acquisitions (i.e., potential "part-takes") associated with septic system setbacks could total 315.2 hectares (780.2 acres) being removed

from the property tax roll. This could result in an estimated direct loss of \$9,306 in annual property tax, as shown in Table 8.2-4.

Table 8.2-4. Estimated Direct Property Tax Impacts From Proposed Action

Private Parcel Acquisitions	Parcels	Area of Take		Estimated Annual Property Tax Loss	Percent of S.D. County Property Taxes ⁽¹⁾
		Hectares	Acres		
Part-Takes	18	315.20	780.21	\$9,306	0.000%
Full-Takes	12	44.42	109.94	\$32,840	0.001%
Total Property Takes	30	359.62	890.15	\$42,146	0.001%

⁽¹⁾ San Diego County Tax Assessor, Fiscal Year 2006 Property Tax Assessment (approximately \$3.6 billion).
Source: San Diego County Tax Assessor and CIC Research, Inc.

The combined total of approximately 30 privately owned parcels that surround San Vicente Reservoir that could be affected by potential full-takes and part-takes due to septic system setbacks could result in 359.6 hectares (890.1 acres) being removed from the property tax roll. This could result in an estimated direct loss of \$42,146 in annual property tax. The potential loss of approximately \$42,000 in annual property tax due to the Proposed Action would represent a miniscule portion of the nearly \$3.6 billion in County-wide property tax assessment.

Retail Sales Tax Impacts

San Vicente Reservoir experiences an estimated 25,000-30,000 user days per year. The average trip-related expenditure by lake users is about \$28 per user-day (CIC Research, 2006). This results in an estimated maximum of \$840,000 in annual trip spending at the reservoir.¹ (CIC Research, 2006) If all \$840,000 were taxable, the estimated tax revenue for local governments would be \$8,400 by applying the one cent tax-generation formula. The Proposed Action (in combination with the ESP) is estimated to generate \$382 million in construction expenditures over five years and would generate an estimated annual \$190,000 in retail sales tax revenue (direct, indirect, and induced). Total taxable retail sales in San Diego County were estimated at \$46.7 billion for 2005. Total tax revenue for local governments was about \$500 million for 2005. The Proposed Action would generate a net increase in retail sales tax revenue within the San Vicente Reservoir local community impact area, although this increase would represent an insignificant percentage of taxable retail sales within the region. Nevertheless, no net loss of retail sales tax revenue would result from the Proposed Action.

Property Value Changes

Potential positive and negative property value changes may be associated with the Proposed Action. Property value impacts are not easily quantified without a thorough real estate appraisal, and are, therefore, discussed in a general manner.

¹ 30,000 x \$28.00 = 840,000.

Negative effects could include business relocations, disruption of access to businesses, and dust or noise impacts during construction, and aesthetics/visual quality impacts during and after the construction period. No business relocations or loss of employment for the community are expected during construction of the Proposed Action, and access would be maintained for all businesses located within the San Vicente Reservoir local community impact area. Construction of the Proposed Action would result in significant, unmitigable dust impacts at properties within the San Vicente Reservoir local community impact area even with implementation of standard dust control measures (refer to Section 3.5 [Air Quality for the Proposed Action] of this EIR/EIS). As evaluated in Section 3.11 (Noise and Vibration for the Proposed Action) of this EIR/EIS, nighttime construction activities and batch plant operations would result in significant noise impacts at nearby residences, and construction-related traffic for the Proposed Action would result in significant, unmitigable noise impacts on residents along Vigilante Road and Moreno Avenue. Because these dust and noise impacts would cease upon completion of construction, the Proposed Action would not result in long-term reduction in property values for these homes.

The Proposed Action would not result in significant visual quality impacts to properties within the San Vicente Reservoir local community impact area due to large intervening distances and partial view obstructions (refer to Section 3.3 [Aesthetics for the Proposed Action] of this EIR/EIS). Therefore, the Proposed Action would not cause negative property value changes during and after construction, and the impacts of the Proposed Action would be less than significant.

Positive economic impacts may be derived from potentially higher residential and commercial property values within the San Vicente Reservoir local community impact area due to the larger reservoir and marina and the associated increased recreational opportunities. In addition, the regional economy would benefit from the incomes generated by a major construction project, and this would indirectly benefit regional assessed values through the increase of County-wide sales (refer to previous paragraph). Although these fiscal benefits may not be significant, they would be substantially larger than the potential annual property tax loss of \$42,000 that may be generated by the Proposed Action.

Construction Labor and Materials Impacts

The direct economic impact of the \$382 million construction activities associated with the Proposed Action would include the expenditure of funds on labor and materials. It is expected that San Diego County would provide the majority of the labor pool for the Proposed Action. The direct impact would be the \$382 million in estimated construction costs. The indirect and induced impacts would total \$276 million, yielding a total economic output of \$658.1 million. The total economic output of \$626.1 million would require 5,464 years of labor effort and would generate \$301.2 million in income. As the Proposed Action would require five years for construction, the labor activity would be distributed over the five-year period and would result in approximately 1,093 jobs per year. The \$125 million per year in total economic output generated by the five-year construction project would represent an insignificant portion of the \$161 billion County-wide economy. Furthermore, the direct construction sales impact of \$70

million per year (i.e., \$350 million divided by 5 years) and the 640 annual direct construction jobs would represent an insignificant portion of the \$15 billion in annual sales for the San Diego construction sector and its 118,000 employees.

Farmland Impacts

As evaluated in Section 3.4 (Agricultural Resources for the Proposed Action) of this EIR/EIS, the loss of approximately 46 acres of farmland soils due to the Proposed Action would represent an insignificant percentage of farmable land in the county (0.04 percent), and would rate a minimal level of consideration for protection.

Recreation Impacts

As evaluated in Section 3.15 (Recreation for the Proposed Action) of this EIR/EIS, the displacement of reservoir-dependent businesses from the Proposed Action would be less than significant, but the loss of recreational use of San Vicente Reservoir during the construction period would be significant and unmitigable. In an effort to minimize the loss of recreational use at San Vicente Reservoir, the Water Authority has asked the City of San Diego about the possibility of expanding recreational use at any of their reservoirs. The City is conducting a Business Process Reengineering study; therefore, it is unknown whether the City could accommodate this request now or in the future.

Results of a survey conducted by CIC indicated that residents of San Diego rated other lakes in the area as better recreational locations. In fact, of the survey respondents only 4 percent reported water skiing as their primary purpose for visiting any of the listed lakes. The survey did not indicate if other San Diego County residents used the lake for water skiing.

It is important to note, the boat launch has been closed since September 11, 2006 due to low water levels, and now the lake is closed to water skiing. It will not be re-opened until additional water brings the lake back to safe water ski levels. Because this situation exists, water skiers would have to find alternative recreational locations.

Closure of the reservoir would result in a revenue reduction of \$840,000 per year due to construction activities. It is expected that some proportion of this amount would be spent at other recreational sites in the region; the exact amount depends on site availability and user preference. In comparison, upon completion of the Proposed Action, a re-located and expanded San Vicente Marina would provide greater recreational opportunities for County residents,² the value of which is not known at this time but should be considered a long-term benefit both financially and recreationally.

Again, loss of recreational use of San Vicente Reservoir during the construction period would be significant and unmitigable. However, under the current low water conditions lake users are required to find alternative recreational lakes in the region. This condition will exist until the additional water brings the lake back to boat launch levels.

² 2007 CIC Report, page 50

Environmental Justice Impacts

Based on the demographic information presented above for the San Vicente Reservoir local community impact area and for the region, the number of potential displaced homes would be small (seven single-family residences would be lost to full-takes,) and the affected community would not disproportionately represent a low-income or minority population. The Proposed Action would not result in environmental impacts due to cultural interpretations or affiliations for residents of the San Vicente Reservoir local community impact area. In general, the Proposed Action would be beneficial to residents within the San Vicente Reservoir local community impact area and the County-wide region. These benefits include regional economic protection from potential drought conditions due to increased carryover water storage and enhanced recreational opportunities of an improved reservoir and marina facilities.

8.2.2.5 Cumulative Impacts

The Proposed Action would result in a negligible loss of property taxes (\$42,146.00) and retail sales tax (\$8,400.00) revenues that would not be cumulatively considerable in combination with the potential indirect loss of these revenues from the cumulative projects listed in Table 3.2-1 (Cumulative Projects for the Proposed Action) of this EIR/EIS. The Proposed Action would not result in a cumulative contribution to business displacements, employment loss, or business sales impacts within the San Vicente Reservoir local community impact area. The estimated annual construction costs of the Proposed Action would represent an insignificant amount (0.5 percent) of regional construction output and employment, which would not be cumulatively considerable in combination with the total estimated annual construction costs associated with the cumulative projects listed in Table 3.2-1. The insignificant economic impacts from minimal loss of farmland soils due to the Proposed Action would not be cumulatively considerable in combination with the potential loss of agricultural resources from the cumulative projects listed in Table 3.2-1.

The Proposed Action would not disproportionately affect low-income or minority populations. In addition, the public scoping and public review processes for this EIR/EIS have provided full access to, and meaningful opportunities for open participation in, public information regarding the Proposed Action, including minority and low-income communities.

8.2.3 Socioeconomic Analysis for Moosa 100K Alternative

Table 8.2-5 lists demographic data and forecasts for the Moosa Canyon local community impact area, which is defined as the Valley Center SRA 53. For comparative purposes, data are also listed for the North County East Major Statistical Area (MSA) and the San Diego County region. The North County East MSA includes the communities of Escondido, San Marcos, Vista, Pauma Valley and Fallbrook.

8.2.3.1 Existing Socioeconomic Conditions

This section describes the existing socioeconomic conditions within the Moosa Canyon local community impact area with respect to demographics, number of housing units and types, median personal income, economic character, and retail/business activity.

Demographics

As shown above in Table 8.2-4, the Moosa Canyon local community impact area (SRA 53) had a total estimated population of 21,584 in 2005. Of that total, the majority were reported as being white (70 percent), with a smaller Hispanic population (21 percent) than that of the North County East MSA (38 percent) or the County (29 percent). Nearly 8 out of 10 residents (81 percent) indicated that they only speak English at home, and only 15 percent speak Spanish at home, compared to 28 percent for the North County East MSA and 20 percent for the County.

Housing

The Moosa Canyon local community impact area had an estimated 8,182 housing units in 2005, principally composed of single-family detached residences (73.8 percent). The number of attached units (9.2 percent) is significantly lower in the Moosa Canyon local community impact area than in the North County East MSA (29 percent) or the County (35 percent); whereas, the percentage of mobile homes is much higher in SRA 53 (17 percent) than in the North County East MSA (9 percent) and the County (4 percent). The majority of homes in the Moosa Canyon local community impact area are owner-occupied (85 percent), compared to 62 percent in the North County East MSA and 55 percent in the County. The majority of the homes (51 percent) were built since 1980; however, a large percentage (41 percent) was built between 1960 and 1979. Only 8 percent were built prior to 1960, compared to 13 percent in the North County East MSA and 23 percent in the County.

Housing vacancy information from SANDAG's 2005 estimates indicated that 6.8 percent of the units were vacant in the Moosa Canyon local community impact area, compared to 3.7 percent in the North County East MSA and 4.3 percent in the County. Currently vacancy rates for rental housing throughout the region are extremely low. The vacancy rate reported for the North County East MSA and San Diego County was 4.0 percent. A rental vacancy rate below 5 percent indicates a tight housing market. SANDAG's 2005 estimates indicated a median household size of 2.8 people in the Moosa Canyon local community impact area, compared to the North County East MSA (3.0) and the County (2.8).

The median home sales price of owner-occupied housing in the Moosa Canyon local community impact area was \$706,000 in 2005. Housing values in the Moosa Canyon local community impact area are substantially higher than in the North County East MSA and the County (\$480,000 and \$500,000, respectively), as shown in Table 8.2-6. The average monthly residential rent for the Moosa Canyon local community impact area was \$717 according to the 2000 Census, about the same as for the North County East MSA (\$714) and the County (\$711).

Table 8.2-5. Selected Population and Housing Characteristics for the Moosa Canyon Local Community Impact Area⁽¹⁾, North County East MSA and San Diego County

Characteristic	Valley Center SRA 33	North County East MSA	San Diego County
Population			
2000 Population (U.S. Census 2000)	18,959	380,430	2,813,833
2005 Population (SANDAG)	21,584	417,855	3,211,721
2030 Population Forecast (SANDAG)	43,812	552,913	3,855,085
Percent change (2005-2030)	103.0%	32.3%	20.0%
Gender (SANDAG 2005)			
Male	49.9%	49.5%	49.8%
Female	50.1%	50.5%	50.2%
Age Distribution (SANDAG 2005)			
Under 5 years	5.3%	7.8%	7.3%
5 to 19	21.0%	22.7%	21.1%
20 to 34	14.4%	21.9%	23.1%
35 to 54	27.5%	27.3%	28.7%
55 to 64	12.8%	8.4%	8.8%
65+	19.0%	11.9%	11.0%
Median Age (SANDAG 2005)	43.4	33.8	34.0
Income and Poverty Levels			
Median Household Income (SANDAG 2005)	\$65,856	\$51,302	\$52,192
Families Below Poverty (U.S. Census 2000)	5.1%	7.9%	8.9%
Population Below Poverty (U.S. Census 2000)	8.0%	13.0%	12.4%
Education			
Population 25+ yrs. College Grad. (U.S. Census 2000)	29.0%	23.0%	29.6%
Race (SANDAG 2005)			
Non-Hispanic			
American Indian and Alaska Native	3.3%	0.9%	0.5%
Asian & Pacific Islander	1.7%	4.2%	10.3%
Black or African American	1.3%	2.2%	5.3%
White	70.3%	52.2%	51.6%
Other or Multiple Race	2.3%	2.5%	3.4%
Hispanic	21.1%	38.0%	28.8%
Language Spoken at Home (U.S. Census 2000)			
English Only	81.0%	66.0%	67.0%
Spanish	15.0%	28.0%	20.1%
Asian Pacific Language	1.0%	3.0%	7.3%
Other Language	3.0%	3.0%	5.6%
Housing Units			
2000 Housing Units (U.S. Census 2000)	7,248	131,101	1,040,149
2005 Housing Units (SANDAG 2005)	8,182	141,817	1,108,500
Percent Change (2000-2005)	12.9%	8.2%	6.6%
Total Occupied Units	7,622	136,552	1,061,027

Characteristic	Valley Center SRA 33	North County East MSA	San Diego County
Owner Occupied Housing (U.S. Census 2000)	85.0%	62.0%	55.4%
Renter Occupied Housing (U.S. Census 2000)	15.0%	38.0%	44.6%
Housing Unit Type (SANDAG 2005)	100%	100%	100%
Single Family Residence (detached)	73.8%	62.2%	61.2%
Attached Units	9.2%	28.5%	34.7%
Mobile Homes and Other	17.0%	9.3%	4.2%
Persons/Dwelling Unit (SANDAG 2005)	2.8	3.0	2.8
Average Rent (U.S. Census 2000)	\$717	\$714	\$711
Median Housing Value (U.S. Census 2000)	\$283,451	\$214,240	\$223,363
Median Housing Value (Dataquick, Inc. 2005)	\$706,000	N/A	\$500,000
Housing Vacancy Rates (SANDAG 2005)	6.8%	3.7%	4.3%
Year Built (U.S. Census 2000)	100%	100%	100%
2000 to 2006	N/A	N/A	N/A
1990 to 2000	23.0%	17.0%	13.9%
1980 to 1989	28.0%	29.0%	21.9%
1960 to 1979	41.0%	41.0%	41.3%
1940 to 1959	6.0%	11.0%	17.8%
1939 or earlier	2.0%	2.0%	5.1%
Unemployment Rate (U.S. Census) (persons 16 years or over)	2.0%	4.0%	4.0%
Total Employment 2000 (U.S. Census)	8,311	162,107	1,232,739
Total Employment 2005 (Calif. EDD)	N/A	N/A	1,471,000
Total Employment 2030 Forecast (SANDAG 2005)	9,499	210,820	1,824,030
Employment percent change (2005-2030)	14.3%	30.0%	48.0%
Occupation (U.S. Census 2000)	100%	100%	100%
Management, professional, and related occupations	35.0%	30.0%	37.7%
Service occupations	13.0%	17.0%	16.1%
Sales and office occupations	27.0%	26.0%	27.2%
Farming, forestry and fishing occupations	3.0%	2.0%	0.5%
Construction, extraction, and maintenance occupations	13.0%	12.0%	8.7%
Production, transportation, and material occupations	9.0%	13.0%	9.9%

⁽¹⁾ Poway, Ramona, Lakeside, and Santee SRAs as defined by SANDAG.
Source: 2000 U.S. Census unless otherwise indicated.

Table 8.2-6. Median Home Sales Price Moosa Canyon Local Community Impact Area, North County East MSA and San Diego County

County/City/Area	2005		2004		% Change in Units Sold	\$ Change in Median Price
	# Sold	Median Price	# Sold	Median Price		
Valley Center (92802)	374	\$706,000	445	\$609,000	-16%	15.9%
Escondido N. (92026)	976	\$515,000	1236	\$466,000	-26.6%	10.5%
Fallbrook (92028)	828	\$587,000	995	\$502,000	-16.8%	16.9%
Pauma Valley (92061)	15	\$483,000	54	\$442,000	-72.2%	9.3%
San Marcos N. (92069)	1,014	\$502,000	1493	\$474,000	-32.1%	5.9%
Vista West (92083)	501	\$441,000	576	\$382,000	-13%	15.4%
San Diego County	49,998	\$500,000	53455	\$460,000	-6.5%	8.7%

Source: Dataquik Inc., Dqnews.com, CA Home Sales Activities by City, YTD 2004-2005.

Personal Income

The estimated median household income in 2005 was \$65,856 for the Moosa Canyon local community impact area, and is substantially higher than the median income for the North County East MSA (\$51,302) or the County (\$52,192). Only 5 percent of the Moosa Canyon local community impact area families were below the poverty level in 2000, as compared to 8 percent in the North County East MSA and 9 percent in the County.

Economic Character

Refer to Appendix H to this EIR/EIS for a detailed discussion of the San Diego County regional economy. The retail sales tax rate for taxable sales originating within the North County East MSA is 7.75 percent (Table 8.2-7). The cities of Escondido, San Marcos, and Vista recorded larger increases in retail sales over the last five years (33, 70, and 31 percent, respectively). Total sales were \$2.9 billion in Escondido, \$1.4 billion in San Marcos, and \$1.1 billion in Vista in 2005.

Retail/Business Activity

Moosa Canyon is a rural area north of Escondido. The closest regional shopping center is the North County Fair in Escondido, accessible by I-15. Minimal support services exist within the Moosa Canyon local community impact area (restaurants and gas stations located on main streets such as Lilac Road, Valley Center Road, Mountain Meadow, and Champagne Boulevard). A few markets/supermarkets are located near the Meadow Lake Country Club. There are also other smaller retail stores on Lilac Road and Valley Center Road. Some cattle ranches and plant nurseries are located northwest of Lilac Road and Valley Center Road as well. Personal services such as medical, insurance, and financial are very limited or nonexistent within the Moosa Canyon local community impact area.

Table 8.2-7. Taxable Retail Sales in San Diego County and Portions of North County East MSA

Year	All Taxable Retail Sales							
	San Diego County		Escondido		San Marcos		Vista	
	Sales (\$000s)	Percent Change	Sales (\$000s)	Percent Change	Sales (\$000s)	Percent Change	Sales (\$000s)	Percent Change
2000	\$36,245,418	10.7%	\$2,184,383	N/A	\$848,436	N/A	\$853,093	N/A
2001	\$37,699,333	4.0%	\$2,305,610	5.5%	\$871,180	2.7%	\$873,949	2.4%
2002	\$38,595,547	2.4%	\$2,357,235	2.2%	\$899,773	3.3%	\$913,626	4.5%
2003	\$40,863,978	5.9%	\$2,573,075	9.2%	\$1,064,209	18.3%	\$999,817	9.4%
2004	\$44,470,338	8.8%	\$2,896,376	12.6%	\$1,357,171	27.5%	\$1,036,036	3.6%
2005	\$46,679,471	5.0%	\$2,904,634	0.3%	\$1,442,193	6.3%	\$1,113,593	7.5%
Percent Change (2000-2005)		28.8%		33.0%		70.0%		30.5%

N/A = Not Applicable

Source: California State Board of Equalization, 12/7/06.

8.2.3.2 Impact Analysis

Refer to Section 8.2.2.2 above for a discussion of methodology for analysis of socioeconomic impacts, and federal factors for analysis of environmental justice impacts.

Economic Impacts

This section assesses potential impacts of the Moosa 100K Alternative on the economic activity in the Moosa Canyon local community impact area, including fiscal impacts to local taxing agencies (direct loss of property tax and retail sales tax revenues), property value changes (business relocations, employment losses, and disruption of access to businesses), displacement of construction labor and materials, and loss of farmlands and recreational opportunities.

Direct Loss of Property Tax Revenues

Preliminary estimates indicate that the Moosa 100K Alternative would result in an 870-acre inundation area (Table 8.2-8). The 660-acre septic system buffer area around the reservoir would average about 1,000 feet. The total combined take area would be 1,530 acres. As shown in Table 8.2-8 below, 39 residences would be displaced through inundation, and 88 would be lost to the septic tank system buffers. The average property tax collected in the five property tax rate areas within the Moosa 100K study area was \$804 per acre for FY2006. The estimated total tax loss due to the taking of private property for the Moosa 100K Alternative would be \$1,230,000, as shown in Table 8.2-8. The potential loss of approximately \$1,230,000 in annual property tax from the Moosa 100K Alternative would represent an incremental portion of the nearly \$3.6 billion in County-wide property tax assessment.

Table 8.2-8. Estimated Direct Property Tax Impacts From Moosa 100K Alternative

Private Parcel Acquisitions	Residences	Area of Take	Estimated Annual Property Tax Loss	Percent of S.D. County Property Taxes ⁽¹⁾
		Acres		
Inundation Area	39	870	\$699,480	0.019%
Septic Buffer Area	88	660	\$530,640	0.015%
Total Property Takes	127	1,530	\$1,230,120	0.034%

⁽¹⁾ San Diego County Tax Assessor, Fiscal Year 2006 Property Tax Assessment (approximately \$3.6 billion).

Moosa average property tax per acre: \$804

Source: San Diego County Tax Assessor and CIC Research, Inc.

Retail Sales Tax Impacts

The preliminary engineering estimate of \$646 million in construction expenditures over five years for the Moosa 100K Alternative would generate an estimated \$490,000 in retail sales tax revenue per year (direct, indirect, and induced). Total taxable retail sales in San Diego County were estimated at \$46.7 billion for 2005. Total tax revenue for local governments was about \$500 million for 2005. The Moosa 100K Alternative would generate a net increase in retail sales tax revenue within the Moosa Canyon local community impact area, although this increase would represent an insignificant percentage of taxable retail sales within the region. Nevertheless, no net loss of retail sales tax revenue would result from this alternative.

Property Value Changes

No business relocations or loss of employment for the community are expected during construction of the Moosa 100K Alternative, and access would be maintained for all businesses located within the Moosa Canyon local community impact area. Construction of the Moosa 100K Alternative would result in significant, unmitigable dust impacts at properties within the Moosa Canyon local community impact area even with implementation of standard dust control measures (refer to Section 4.5 [Air Quality for the Moosa 100K Alternative] of this EIR/EIS). As evaluated in Section 4.11 (Noise and Vibration for the Moosa 100K Alternative) of this EIR/EIS, nighttime tunneling operations would result in significant noise impacts at nearby residences, and construction-related traffic for the Moosa 100K Alternative would result in significant, unmitigable noise impacts on residents along Betsworth Road and Old Castle Road. Because these dust and noise impacts would cease upon completion of construction, the Moosa 100K Alternative would not affect property values for these homes.

As evaluated in Section 4.3 (Aesthetics for the Moosa 100K Alternative) of this EIR/EIS, the Moosa 100K Alternative would result in the following significant, unmitigable visual quality impacts at properties within the Moosa Canyon local community impact area: (1) permanent loss of natural vegetation and topographic features due to the inundation of a large portion of Moosa Canyon; and (2) long-term visual quality degradation due to construction of a large dam in Moosa Canyon, the Moosa Canyon Pump Station, and the VCMWD Pump Station; each would be highly visible and contrasting with the surrounding natural features. However, this alternative

would also provide a positive long-term visual quality amenity. The reservoir for the Moosa 100K Alternative would be much larger than the existing Turner Reservoir and would provide enhanced lake views and recreational opportunities that would likely result in permanent increased property values for the Moosa Canyon local community impact area. In addition, the regional economy (i.e., property values) would benefit from more reliable water resources in this area. Therefore, the Moosa 100K Alternative could cause both negative and positive property value changes as a result of long-term visual quality impacts.

Additional positive economic impacts may be derived from potentially higher residential and commercial property values within the Moosa Canyon local community impact area due to the new reservoir and marina and the associated increased recreational opportunities. In addition, the regional economy would benefit from the incomes generated by a major construction project and this would indirectly benefit regional assessed values through the increase of County-wide sales (refer to previous paragraph). These fiscal benefits would be substantially larger than the potential annual property tax loss of \$1,230,000 that may be generated by the Moosa 100K Alternative.

Construction Labor and Materials Impacts

The direct economic impact of the \$646 million construction activities associated with the Moosa 100K Alternative would include the expenditure of funds on labor and materials. It is expected that San Diego County would provide the majority of the labor pool for this alternative. The direct impact would be the \$646 million in estimated construction cost. The indirect and induced impacts would total \$708 million, yielding a total economic output of \$1.61 billion. The total economic output of \$1.61 billion would require 14,049 years of labor effort and would generate \$774 million in income. Because the Moosa 100K Alternative would require five years for construction, the labor activity would be distributed over the five-year period and would result in approximately 1,645 jobs per year. The \$180 million average annual construction expenditure generating about 1,645 jobs per year over a five-year construction period would not represent a significant portion of the \$15 billion in annual sales for the San Diego construction sector or the 118,000 construction employees. Therefore, impacts are anticipated on regional businesses as a result of construction labor displacement or inter-industry sales during the construction period for the Moosa 100K Alternative.

Farmland Impacts

As evaluated in Section 4.4 (Agriculture for the Moosa 100K Alternative) of this EIR/EIS, the permanent loss of two Williamson Act contract parcels (~ 58 acres) and approximately 208 acres of active farmlands, nurseries, and farmland soils [see pages 4.9-7, 4.9-3] due to the Moosa 100K Alternative would represent a significant percentage of farmable land in the County (2.2 percent) based on the Moosa Alternative 100K farmland conversion rating of 192, which is above the 160 significance threshold of 160 and would qualify as at a high level of consideration for protection.

Recreation Impacts

As evaluated in Section 4.15 (Recreation for the Moosa 100K Alternative) of this EIR/EIS, the loss of Aerie Park Equestrian Facility due to the Moosa 100K Alternative would be significant

Environmental Justice Impacts

Based on the demographic information presented above for the Moosa Canyon local community impact area and for the region, although the number of potential displaced homes would be large (approximately 127 single-family residences), the affected community would not disproportionately represent a low-income or minority population. The Moosa 100K Alternative would not result in environmental impacts due to cultural interpretations or affiliations for residents of the Moosa Canyon local community impact area.

8.2.3.5 Cumulative Impacts

The Moosa 100K Alternative would result in a negligible loss of property tax and retail sales tax revenues that would not be cumulatively considerable in combination with the potential indirect loss of these revenues from the cumulative projects listed in Table 4.2-1. The Moosa 100K Alternative would not result in a cumulative contribution to business displacements, employment loss, or business sales impacts within the Moosa Canyon local community impact area. The estimated annual construction costs of this alternative would represent an insignificant amount (1.1 percent) of regional construction output and employment, which would not be cumulatively considerable in combination with the total estimated annual construction costs associated with the cumulative projects listed in Table 4.2-1.

The Moosa 100K Alternative would result in cumulatively considerable contributions to the following property value and economic impacts within the Moosa 100K local community impact area, in combination with the cumulative projects listed in Table 4.2-1: (1) long-term visual quality impacts from the dam and pump stations; (2) permanent loss of two Williamson Act contract parcels and approximately 208 acres of active farmlands, nurseries, and farmland soils; and (3) potential relocation of Aerie Park Equestrian Facility.

The Moosa 100K Alternative would not disproportionately affect low-income or minority populations. In addition, the public scoping and public review processes for this EIR/EIS have provided full access to, and meaningful opportunities for open participation in, public information regarding this alternative, including minority and low-income communities. Therefore, potential cumulative environmental justice impacts of the Moosa 100K Alternative would be less than significant.

8.2.4 Socioeconomic Analysis for SV 50K/ Moosa 50K Alternative

The local community impact areas for the SV 50K and Moosa 50K components of this alternative are the same as those described in Sections 8.2.2 and 8.2.3 above for San Vicente Reservoir (Proposed Action) and Moosa Canyon (Moosa 100K Alternative), respectively. Refer to Tables 8.2.2 and 8.2.3 for demographic data and forecasts for the San Vicente Reservoir and Moosa Canyon local community impact areas.

8.2.4.1 Existing Socioeconomic Conditions

Refer to Sections 8.2.2.1 and 8.2.3.1 above for existing socioeconomic conditions for the San Vicente Reservoir and Moosa Canyon local community impact areas with respect to demographics, number of housing units and types, median personal income, economic character, and retail/business activity.

8.2.4.2 Impact Analysis

Refer to Section 8.2.2.2 above for a discussion of methodology for analysis of socioeconomic impacts, and federal factors for analysis of environmental justice impacts.

Economic Impacts

This section assesses potential impacts of the SV 50K/Moosa 50K Alternative on the economic activity in the San Vicente Reservoir and Moosa Canyon local community impact areas, including fiscal impacts on local taxing agencies (direct loss of property tax and retail sales tax revenues), property value changes (business relocations, employment losses, and disruption of access to businesses), displacement of construction labor and materials, and loss of farmlands and recreational opportunities.

Direct Loss of Property Tax Revenues

This alternative would result in a total combined take area (inundation area and septic buffer area for both the SV 50K and Moosa 50K footprints) of 1,493 acres removed from the property tax roll and a total combined estimated loss of \$931,000 in annual property tax revenues (Table 8.2-9). The \$931,000 in decreased annual property tax revenue would be an insignificant 0.026 percent of the County-wide property tax assessment.

Table 8.2-9. Estimated Direct Property Tax Impacts From SV 50K/Moosa 50K Alternative

Private Parcel Acquisitions	Residences		Area of Take Acres	Estimated Annual Property Tax Loss	Percent of S.D. County Property Taxes ⁽¹⁾
	SV 50K	Moosa 50K			
Inundation Area		27	535	\$430,140	0.012%
Septic Buffer Area	5	35	958.07	\$500,426	0.014%
Total Property Takes		69	1,493.07	\$930,566	0.026%

⁽¹⁾ San Diego County Tax Assessor, Fiscal Year 2006 Property Tax Assessment (approximately \$3.6 billion).

Moosa average property tax per acre: \$804

Source: San Diego County Tax Assessor and CIC Research, Inc.

Retail Sales Tax Impacts

The \$754 million in total combined construction expenditures over five years for the SV 50K/Moosa 50K Alternative would generate an estimated \$680,000 in retail sales tax revenue per year (direct, indirect, and induced). Total taxable retail sales in San Diego County were estimated at \$46.7 billion for 2005. Total tax revenue for local governments was about \$500 million for 2005. The SV 50K/Moosa 50K Alternative would generate a total combined net increase in retail sales tax revenue within the San Vicente Reservoir and Moosa Canyon local community impact areas, but it would represent an insignificant 0.1 percent of taxable retail sales within the region.

Property Value Changes

The evaluations of potential property value changes for the Proposed Action (Section 8.2.2.2 above) and the Moosa 100K Alternative (Section 8.2.3.2 above) apply equally to the SV 50K/Moosa 50K Alternative for the San Vicente Reservoir and Moosa Canyon local community impact areas.

Construction Labor and Materials Impacts

The total combined economic impact of the \$754 million construction activities associated with the SV 50K/Moosa 50K Alternative would include the expenditure of funds on labor and materials. It is expected that San Diego County would provide the majority of the labor pool for this alternative. The total combined direct impact would be the \$910 million in estimated construction cost. The total combined indirect and induced impacts would total \$718 million, yielding a total combined economic output of \$1.63 billion. This economic output would require a total combined 14,205 years of labor effort and \$783 million in income. Because this alternative would require five years for construction, the labor activity would be distributed over the five-year period and would result in a total combined 1,663 jobs per year. The total combined \$182 million average annual construction expenditure generating about 1,663 jobs per year over a five-year construction period would not represent a significant portion of the \$15 billion in annual sales for the San Diego construction sector or the 118,000 construction employees. Therefore, impacts are anticipated to regional businesses as a result of construction

labor displacement or inter-industry sales during the construction period for the SV 50K/Moosa 50K Alternative.

Farmland Impacts

As discussed in Section 8.2.2.2 above, the SV 100K footprint does not include any active farms, and the soils are largely unsuitable for farming. This conclusion also applies to the smaller SV 50K footprint. However, there are several active farms and nurseries in the inundation area that would be directly affected by the Moosa 50K component of the SV 50K/Moosa 50K Alternative. Significant farmland impacts would result from the Moosa 50K footprint including direct impacts to two Williamson Act contract parcels. The total combined area of the SV 50K/Moosa 50K Alternative footprints would impact 132.8 acres of Prime and Unique Farmland soils and 85.6 acres of Statewide and Local Important Farmland soils. The resulting combined total farmland soils converted would be 218.4 acres, or approximately 2 percent of the County-wide total that is rated Prime and Unique or Statewide and Locally Important, and would rate a high level of consideration for protection.

Recreation Impacts

The evaluations of recreational economic impacts for the Proposed Action (Section 8.2.2.2 above) and the Moosa 100K Alternative (Section 8.2.3.2 above) apply equally to the SV 50K/Moosa 50K Alternative for the San Vicente Reservoir and Moosa Canyon local community impact areas.

Environmental Justice Impacts

Based on the demographic information presented above for the San Vicente Reservoir and Moosa Canyon local community impact areas and for the region, although the number of potential displaced homes would be large for the Moosa 50K component of this alternative (approximately 62 residences), the affected communities would not disproportionately represent low-income or minority populations. This alternative would not result in environmental impacts due to cultural interpretations or affiliations for residents of the San Vicente Reservoir or Moosa Canyon local community impact areas.

8.2.4.5 Cumulative Impacts

Refer to Sections 8.2.2.5 and 8.2.3.5 above.

8.3 Effects Found Not Significant

CEQA requires that the environmental document include a brief discussion of the various environmental issues that were determined not to be significant and were not discussed in detail in the EIR (Public Resources Code Section 21002.1 and CEQA Guidelines Section 15128).

The EIR/EIS for the Carryover Storage and San Vicente Dam Raise Project (SCH No. 2006101044) did not dismiss any of the various environmental issues; all possible effects of the project were analyzed in detail (refer to Section 1.5.2 [Scoping Process] of this EIR/EIS). Results of the comprehensive environmental/technical analysis are presented in Chapters 3.0, 4.0, and 5.0 of this EIR/EIS. Irretrievable changes to the environment, such as the use of nonrenewable resources, the provision of access to a previously inaccessible area, and the irretrievable commitments of resources are discussed in Section 8.5 below. Other consequences of the project, such as enhancement of recreation and the positive effect of job creation on the regional economy, were found to be beneficial and are discussed in more detail in the beneficial effects discussion for Proposed Action (Section 3.18), Moosa 100K Alternative (Section 4.18), and the SV50K/Moosa 50K Alternative (Section 5.18) of this EIR/EIS.

Issues that were considered to be potentially significant at the initiation of the environmental review process, but through subsequent analysis and incorporation of General Conditions and Standard Specifications (or previous ESP EIR/EIS requirements) prior to mitigation were determined to be less than significant for the Proposed Action and alternatives are as follows:

- Aesthetics (Proposed Action only)
- Cultural Resources (Proposed Action only)
- Geology/Soils
- Mineral Resources
- Paleontology
- Public Safety/Hazards (Proposed Action only)
- Public Services/Utilities (Proposed Action only)
- Energy consumption

General Conditions and Standard Specifications for the Proposed Action and alternatives are compiled in Section 1.9 (Introduction) of this EIR/EIS. The detailed impact analyses and project design features for these issues are provided in Chapters 3.0, 4.0, and 5.0, respectively, of this EIR/EIS.

8.4 Non-Applicable Significance Thresholds

CEQA Guidelines Section 15128 states that an EIR “shall contain a statement briefly indicating the reasons that various possible significant effects of a project were determined not to be significant and were therefore not discussed in detail in the EIR.”

The following significance thresholds were eliminated from further review because it was obvious during the initial environmental review process that impacts on these resource issues, as a result of the Proposed Action, would be less than significant. A discussion of the rationale for this determination is presented for each issue.

Other issues were determined to be potentially significant at the initial environmental review process, but through subsequent analysis were determined to be less than significant through

project design. These issues, which are discussed in detail in Chapters 3.0, 4.0, and 5.0 for the Proposed Action, Moosa 100K Alternative, and SV 50K/Moosa 50K Alternative, respectively, of this EIR/EIS, were found not to be significant for the reasons discussed in Section 8.3 above.

8.4.1 Biological Resources

Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

As a Special Act District, the Water Authority is not subject to local land use plans, policies, and ordinances. Therefore, this threshold does not apply.

8.4.2 Geology and Soils

Would the proposed project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No septic tanks or other alternative wastewater disposal system that would have the potential to impact water quality would be part of this project. Wastewater systems for the expanded or new marina would consist of holding tanks and portable toilets that would be pumped out by a maintenance service. Therefore, it would not be necessary for soil in the San Vicente or Moosa project areas to be capable of adequately supporting the use of septic tanks, and this threshold does not apply.

8.4.3 Mineral Resources

Would the proposed project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

Aggregate obtained from the marina, southwest quarry or off-site quarry options for the San Vicente raised dam would be in areas mapped as MRZ-2, where significant mineral deposits are present. However, their use for the project would be of value to the region, so would not represent a loss of availability. Therefore, this threshold does not apply.

8.4.4 Noise and Vibration

For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the proposed project expose people residing or working in the project area to excessive noise levels?

The Proposed Action is not located within an airport land use plan or within two miles of a public airport or public use airport; therefore, this threshold does not apply.

For a project within the vicinity of a private airstrip, would the proposed project expose people residing or working in the project area to excessive noise levels?

The Proposed Action is not located within the vicinity of a private airstrip; therefore, this threshold does not apply.

8.4.5 Public Safety and Hazards

Would the proposed project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

The Proposed Action is not located within one-quarter mile of an existing or proposed school; therefore, this threshold does not apply.

Would the proposed project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

There are no buildings or facilities (e.g., schools, office towers) with an adopted emergency response plan or evacuation plan in the vicinity of the Proposed Action. The emergency response plan adopted for the San Vicente Reservoir will be updated as necessary as a part of this project. Therefore, this threshold does not apply.

Would the proposed project expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

The Proposed Action is a public water supply storage project that does not propose any new homes or businesses that would be located adjacent to wildlands; therefore, this threshold does not apply.

Would the proposed project result in a safety hazard for people residing or working within an area covered by an airport land use plan or within two miles of a public airport or public use airport?

The Proposed Action is not located within an airport land use plan or within two miles of a public airport or public use airport; therefore, this threshold does not apply (also see Noise and Vibration).

Would the proposed project result in a safety hazard for people residing or working within an area within the vicinity of a private airstrip?

The Proposed Action is not located within the vicinity of a private airstrip; therefore, this threshold does not apply (also see Noise and Vibration).

8.4.6 Public Services and Utilities

Would the proposed project exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Neither construction nor operation of the Proposed Action would require increased capacity for wastewater treatment or sewer conveyance facilities. Existing sewer lines serving this area are adequate. Restroom facilities and portable toilets at the expanded or new marina would be maintained by a sanitation service that would dispose of the contents of the holding tanks on a regular basis. Therefore the Proposed Action would not exceed RWQCB (Region 9) wastewater treatment requirements.

Would the proposed project require or result in the construction of new water treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

The Proposed Action is a public water supply storage project that does not propose construction or expansion of new water treatment facilities; therefore, this threshold does not apply.

Would the proposed project not comply with federal, state, and local statutes and regulations related to solid waste?

Pursuant to the Water Authority's General Conditions and Standard Specifications, all construction waste would be properly handled and disposed of in accordance with local, state and federal regulations. Moreover, the Carryover Storage and San Vicente Dam Raise Project is a public water supply storage project that would not generate substantial operational waste that would impact the permitted capacity of area landfills; therefore, this threshold does not apply.

8.4.7 Traffic/Circulation

Would the proposed project significantly worsen congestion at any freeway ramp that is currently operating, or is projected to operate at a 15 minute delay, by adding two minutes or more to the delays experienced by motorists at the freeway ramp?

The Proposed Action is not located in the vicinity of any freeway ramp that is currently operating or projected to operate at a 15 minute delay. Therefore, this threshold would not apply.

Would the proposed project substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

The Proposed Action is a public water supply storage project that does not include uses (e.g., farm equipment) that would increase hazards or create incompatible vehicle use on public roads. While slow-moving trucks could result in an overall slowing of traffic on some roadway segments, as analyzed in Threshold 3 in Sections 3.16, 4.16, and 5.16), the project would maintain the same type of traffic mix after construction as currently exists. In addition, any new

or relocated access roads required for the project would be designed to meet City standards to ensure public safety, and would lessen any potential hazards that currently exist. Therefore, this threshold does not apply.

Would the proposed project result in inadequate parking capacity?

The Water Authority will provide adequate parking for the expanded or new reservoir and expanded or new marina as part of the project; therefore, this threshold does not apply.

Would the proposed project result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

The Proposed Action is a public water supply storage project that does not include uses that would require routine airspace or increased air traffic levels. Therefore, this threshold does not apply.

Would the proposed project conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?

The Proposed Action is a public water supply storage project that is located away from the urbanized centers that are targeted for alternative transportation in the SANDAG Regional Transit Plan, the City of San Diego General Plan Update, and the County of San Diego General Plan Update. Local access to transit and bicycle routes would remain the same. Therefore, this threshold does not apply.

8.5 Unavoidable Significant Effects

CEQA and NEPA require an EIR/EIS to describe any significant impacts, including those that can be mitigated but not reduced to a level of insignificance (NEPA regulations [40 CFR 1502.1] and State CEQA Guidelines Section 15126.2[b]). Chapters 3.0, 4.0, and 5.0 of this EIR/EIS analyze the Proposed Action, the Moosa 100K Alternative, and the SV 50K/ Moosa 50K Alternative, respectively, in terms of the various significance thresholds for each of 17 environmental issues evaluated. Specific technical studies and analyses were conducted to determine whether implementation of the Proposed Action would result in a significant adverse impact in any of these issue areas. Specific significance thresholds were defined for each potential impact. In addition, General Conditions and Standard Specifications (Section 1.9 [Introduction] of this EIR/EIS) and project design features were identified for each issue area.

Significant impacts were identified by measuring the project's performance against specific significance thresholds. If significant impacts were identified, and the General Conditions and Standard Specifications and project design features would not clearly reduce potential impacts, then mitigation measures were developed that would reduce impacts. In most cases, these measures would reduce significant impacts to a less-than-significant level with no residual impacts.

After thorough analysis (refer to Sections 3.0, 4.0 and 5.0 of this EIR/EIS), the application of the General Conditions and Standard Specifications (Section 1.9 [Introduction] of this EIR/EIS) and project design features, and application of feasible mitigation measures, some impacts from the Proposed Action and alternatives were found to be unavoidable and unable to be fully reduced to a less-than-significant level, due to the type, timing/duration, or location of the identified impact. Approval and implementation of a project that involves unmitigable significant impacts typically requires a Statement of Overriding Considerations (SOC) by the Lead Agency for CEQA compliance, in this case the Water Authority. The impacts that cannot be fully mitigated to a less-than-significant level, and would remain significant and unmitigable are as follows:

Proposed Action

- **Air Quality (3.5).** Implementation of General Conditions and Standard Specifications and Best Management Practices (BMPs) would help reduce construction emissions. However, there are no additional feasible mitigation measures to reduce impacts below thresholds. The construction-related direct air quality impacts (*Impact SV/AQ 1*) and cumulative air quality impacts (*Impact SV/AQ 1C*) associated with the on-site quarry options and the off-site quarry option would remain significant and unmitigable. The impacts would cease upon completion of construction.
- **Noise (3.11).** There are no feasible measures to reduce noise impacts from dam construction activities and blasting for tunneling operations south of the dam and nighttime noise from batch plant operations (*Impacts SV/NV 1, SV/NV 2, and SV/NV 3*). Impacts due to noise level increases along Vigilante Road and Moreno Avenue from Proposed Action construction traffic (*Impact SV/NV 4*) would remain significant and unmitigable. Cumulative effects (*Impacts SV/NV 1C, SV/NV 2C, SV/NV 3C, and SV/NV 4C*) would also be significant and unmitigable. The impacts would cease upon completion of construction.
- **Recreation (3.15).** Because it is unknown whether the City will construct or expand recreational facilities for fishing and water sports at their other reservoirs to compensate for the temporary loss of these activities at San Vicente Marina and Reservoir during construction of the Proposed Action, and whether such expansions (if any) could result in significant project and cumulative environmental effects, (*Impacts SV/R 1, SV/R 2, and SV/R 3, and Impacts SV/R 1C, SV/R 2C, and SV/R 3C*), it is assumed that potential impacts on other City reservoir recreational facilities would be significant and unmitigable.
- **Traffic/Circulation (3.16).** Project and cumulative impacts due to construction-related traffic congestion at SR-67/Vigilante Road intersection (*Impact SV/TC 1 and Impact SV/TC 1C*) and the SR-67/Willow Road intersection (*Impact SV/TC 2 and Impact SV/TC 2C*), and impacts due to construction-related traffic safety risks on SR-67 (*Impact SV/TC 3 and Impact SV/TC 3C*), would be significant and unmitigable. The impacts would cease upon completion of construction.

Moosa 100K Alternative

- **Aesthetics (4.3).** The project and cumulative aesthetics/visual quality impacts of the Moosa 100K Alternative (*Impacts M/VQ 1 through M/VQ 5*, and *Impacts M/VQ 1C through M/VQ 5C*) would be significant and unmitigable because no feasible mitigation is available to fully offset impacts on visual character or quality in the affected viewsheds.
- **Agricultural Resources (4.4).** The Moosa 100K Alternative would convert approximately 208 acres of designated Prime and Unique Farmland and Farmland of Statewide and Local Importance to non-agricultural uses (2.2 percent reduction from County inventory) (*Impact M/AG 1*). The Moosa 100K Alternative would affect two Williamson Act contract parcels (*Impact M/AG 2*). However, there is no feasible mitigation to offset these losses. Cumulative impacts (*Impact M/AG 1C* and *M/AG 2C*) would also be significant and unmitigable.
- **Air Quality (4.5).** The construction-related direct air quality impacts (*Impact M/AQ 1*) and cumulative air quality impacts (*Impact M/AQ 1C*) associated with the Moosa 100K Alternative would remain significant and unmitigable, even with implementation of General Conditions and Standard Specifications and BMPs.
- **Biological Resources (4.6).** The Moosa 100K Alternative would permanently block the movement of native resident and migratory wildlife species through the Moosa Canyon regional wildlife corridor, but temporary and indirect impacts of construction activities on local wildlife movement would be reduced through retention of Turner Reservoir as a source of drinking water and through implementation of the General Conditions and Standard Specifications in Section 1.9.3 (Introduction) of this EIR/EIS and the project design features listed in Section 3.6.2 (Biological Resources for the Proposed Action) of this EIR/EIS. Mitigation Measure M/BR 22-1 could reduce the magnitude of this impact, but the setback requirements may not be feasible. Therefore, the project (*Impact M/BR 22*) and cumulative (*Impact M/BR 22*) impacts would remain significant and unavoidable.
- **Cultural Resources (4.7).** The Moosa 100K Alternative could disturb human remains, including those interred outside of formal cemeteries, either during future NRHP evaluations or during construction activities (*Impact M/CR 2*). Even with implementation of project design and avoidance measures, including stipulations of the ESP PA that address unexpected discoveries during construction, it may not be feasible to completely avoid impacts to human remains. Cumulative impacts (*Impact M/CR 2C*) would also remain significant and unmitigable.
- **Land Use (4.9).** Project and cumulative impacts related to dividing an established community (*Impact M/LU 1* and *Impact M/LU 1C*), affecting land uses with the Moosa Reservoir footprint (*Impact M/LU 2* and *Impact M/LU 2C*), and disruption of agricultural land uses (*Impact M/LU 4* and *M/LU 4C*) would be significant and unmitigable because there is no feasible mitigation to reduce these impacts. Even with Mitigation Measures M/LU 3-1 through M/LU 3-3, the displacement of residences due to

establishment of a septic system setback (*Impact M/LU 3* and *Impact M/LU 3C*) could not be fully mitigated. Impacts would remain significant and unmitigable.

- **Noise (4.11).** The Moosa 100K Alternative would expose sensitive receptors to noise levels that exceed the nighttime noise standard from construction equipment and blasting activities associated with pipeline tunneling operations, and there is no feasible mitigation to reduce this impact to below established noise level thresholds (*Impact M/NV 1* and *Impact M/NV 1C*). The significant impacts from increased noise levels along Betsworth Road and Old Castle Road due to construction traffic (*Impact M/NV 2* and *Impact M/NV 2C*) cannot be reduced by any measure other than reducing construction-related vehicle trips below the estimated traffic volumes associated with the Moosa 100K Alternative. This is not considered practicable due to the construction process. Therefore, this impact would be significant and unmitigable. These significant impacts would cease upon the completion of construction.
- **Public Services and Utilities (4.14).** The significant impact related to new water right entitlements may not be mitigable to a less-than-significant level through implementation of mitigation measures, because it is not possible to know what the potential environmental impacts might be associated with the granting of the right. (*Impact M/PS 1* and *Impact M/PS 1C*).
- **Recreation (4.15).** It is unknown where a replacement facility for Aerie Park would be, and there are no plans to construct a new off-site trail system to replace the planned trail network that would be inundated by the construction and filling of the Moosa Reservoir. Significant project and cumulative impacts associated with the potential environmental effects that could occur for construction of replacement facilities are unknown (*Impact M/R 2*, *Impact M/R 3*, *Impact M/R 2C*, and *Impact M/R 3C*); therefore, the impacts would be unmitigable.
- **Traffic (4.16).** Impacts due to construction-related traffic congestion at Lilac Road/Betsworth Road (*Impact M/TC 1*), the I-15 Southbound Ramps/Gopher Canyon Road (*Impact M/TC 2*), and the street segments of Valley Center Road (south of Lilac Road) (*Impact M/TC 3*) and Old Castle Road (east of Champagne Boulevard) (*Impact M/TC 4*) would remain significant and unmitigable because there are no feasible measures to avoid these temporary impacts. Cumulative impacts would also occur at these locations (*Impacts M/TC 1C*, *M/TC 2C*, *M/TC 3C*, and *M/TC 4C*). These project and cumulative impacts would cease upon completion of construction.

SV 50K/Moosa 50K Alternative

- **Aesthetics (5.3).** The project and cumulative aesthetics/visual quality impacts of the Moosa 50K component of the SV 50K/Moosa 50K Alternative (*Impacts SV/M/VQ 1 through SV/M/VQ 5* and *Impacts SV/M/VQ 1C through 5C*) would be significant and unmitigable because there is no feasible mitigation available to fully offset impacts on visual character or quality in the affected viewsheds. Therefore, impacts of the SV 50K/Moosa 50K Alternative would be significant and unmitigable.

- **Agricultural Resources (5.4).** The SV 50K/Moosa 50K Alternative would convert mapped Farmland to non-agricultural use and would not offset this loss. Therefore, impacts of the SV 50K/Moosa 50K Alternative would be significant (*Impact SV/M/AG 1* and *Impact SV/M/AG 1C*). The SV 50K/Moosa 50K Alternative would conflict with Williamson Act lands, and no mitigation is available. Therefore, project and cumulative impacts of the SV 50K/Moosa 50K Alternative would be significant (*Impact SV/M/AG 2* and *SV/M/AG 2C*).
- **Air Quality (5.5).** The SV 50K/Moosa 50K Alternative construction-related direct and cumulative air quality impacts (*Impact SV/M/AQ 1* and *SV/M/Impact AQ 1C*) would remain significant and unmitigable for the reasons described under the Proposed Action and Moosa 100K Alternative above.
- **Biological Resources (5.6).** The Moosa 50K component of the SV 50K/Moosa 50K Alternative would permanently block the movement of native resident and migratory wildlife species through the Moosa Canyon regional wildlife corridor, but temporary and indirect impacts of construction activities on local wildlife movement would be reduced through retention of Turner Reservoir as a source of drinking water for wildlife and through implementation of the General Conditions and Standard Specifications in Section 1.9.3 (Introduction) of this EIR/EIS and the project design features listed in Section 3.6.2 (Biological Resources for the Proposed Action) of this EIR/EIS. As described for the Moosa 100K Alternative above, even with mitigation (Mitigation Measure M/BR 22-1), project and cumulative impacts of the Moosa 50K component of this alternative would be significant, and, therefore, impacts of the SV 50K/Moosa 50K Alternative would remain significant and unmitigable (*Impact SV/M/BR 23* and *Impact SV/M/BR 23C*).
- **Cultural Resources (5.7).** The Moosa 50K component of the SV 50K/Moosa 50K Alternative could disturb human remains, including those interred outside of formal cemeteries, either during future NRHP evaluations or during construction activities (*Impact SV/M/CR 2*). Even with implementation of project design and avoidance measures, including stipulations of the ESP PA that address unexpected discoveries during construction, it may not be feasible to completely avoid impacts to human remains. Therefore, impacts of the SV 50K/Moosa 50K Alternative would be significant. Significant cumulative impacts (*Impact SV/M/CR 2C*) would also be unmitigable.
- **Land Use (5.9).** Project and cumulative impacts of the SV 50K/Moosa 50K Alternative would be significant and unmitigable due to impacts of the Moosa 50K component of this alternative, which would result in a permanent division of an established community, affect land uses within the footprint, result in displacement residences due to septic setbacks, and disruption of agricultural land uses (*Impacts SV/M/ LU 1 through SV/M/LU 4* and *Impacts SV/M/LU 1C through SV/M/LU 4C*).
- **Noise (5.11).** Impacts due to noise level increases due to nighttime construction activities *Impact SV/M/NV 1* and *SV/M/NV 1C*, and noise level increases along Vigilante Road and Moreno Avenue, and along Betsworth Road from Moosa 50K Alternative construction traffic (*Impact SV/M/NV 2 and SV/M/NV 2C*) would be significant and

unmitigable because there is no feasible mitigation to address these short-term impacts. However, these impacts would cease upon completion of construction.

- **Public Services and Utilities (5.14).** The significant impact related to new water right entitlements may not be mitigable to a less-than-significant level through implementation of mitigation measures, because it is not possible to know what the potential environmental impacts might be associated with the granting of the right (*Impact SV/M/PS 1* and *Impact SV/M/PS 1C*).
- **Recreation (5.15).** Because it is unknown whether the City will construct or expand recreational facilities for fishing and water sports at their other reservoirs to compensate for the temporary loss of these activities at San Vicente Marina during construction of the SV 50K component, it is assumed that potential environmental impacts on other City reservoir recreational facilities would be significant and unmitigable (*Impacts SV/M/R 1, SV/M/R 2, and SV/M/R 3*). Because it is unknown where a replacement facility for Aerie Park or the trail network may be located, there could be significant adverse environmental effects from the development of these facilities that cannot be determined at this time, so significant impacts of the Moosa 50K component could remain (*Impact SV/M/R 4*). Cumulative impacts would also be significant and unmitigable (*Impacts SV/M/R 1C through SV/M/R 4C*).
- **Traffic (5.16).** Significant and unmitigable project impacts would occur as result of construction of both components of the SV 50K/Moosa 50K Alternative as follows: impacts due to construction-related traffic congestion at SR-67/Vigilante Road and SR-67/Willow Road intersections (*Impacts SV/M/TC 1* and *SV/M/TC 2*); impacts due to construction-related traffic safety risks on SR-67 (*Impact SV/M/TC 6*); and impacts due to construction-related traffic congestion at Lilac Road/Betsworth Road, the I-15 Southbound Ramps/Gopher Canyon Road, and the street segment of Valley Center Road (south of Lilac Road) (*Impacts SV/M/TC 3, SV/M/TC 4, and SV/M/TC 5*). In each case, mitigation scenarios were analyzed but were determined to be infeasible or not practicable. These impacts would cease upon completion of construction. Cumulative impacts would also be significant and unmitigable (*Impacts SV/M/TC 1C through SV/M/TC 6C*).

In summary, the Proposed Action and two alternatives would result in significant and unmitigable impacts. For the Proposed Action, four unmitigable impacts would occur; all four of which (air, noise, recreation, and traffic) would cease when the project construction is completed. For the Moosa 100K Alternative, there would be ten significant and unmitigable impacts (same as the Proposed Action with the addition of significant impacts related to aesthetics/visual quality, agricultural resources, biological resources, cultural resources, land use and planning, and public services and utilities (water entitlements). For the SV50K/Moosa 50K Alternative, there would also be ten unmitigable impacts (same as the Proposed Action and Moosa 100K Alternative).

For the two alternatives, the significant and unmitigable impacts on air quality, noise, and traffic would only occur during the construction period, and would cease to occur when construction is

completed. All other issues would remain significant and unmitigable even after construction is completed.

8.6 Irreversible or Irretrievable Commitment of Resources Involved

8.6.1 Introduction

Section 15126.2 (c) of the State CEQA Guidelines requires that an EIR discuss the significant irreversible environmental changes resulting from a proposed project should it be implemented. The State CEQA Guidelines note that the use of nonrenewable resources during the initial and continued phases of the project may be irreversible, because a large commitment of such resources makes their removal or nonuse thereafter unlikely. The Guidelines further note that primary impacts and secondary impacts generally commit future generations to similar uses (e.g., highway improvements that provide access to a previously inaccessible area), and that irreversible damage could result from environmental accidents associated with the proposed project. Section 15126.2 (c) of the State CEQA Guidelines states that irretrievable commitments of resources should be evaluated to assure that such current consumption is justified (Public Resources Code Section 21100(b)(2)(B) and Section 15126(c) and 15126.2(c) of the State CEQA Guidelines).

Section 15127 of the State CEQA Guidelines clarifies that the information regarding irreversible changes need be included only in EIRs prepared in connection with the following: a) the adoption, amendment, or enactment of a plan, policy, or ordinance of a public agency; b) the adoption by a Local Agency Formation Commission (LAFCo) of a resolution making determinations; or c) a project which will be subject to the requirement for preparing an environmental impact statement pursuant to the requirements of the National Environmental Policy Act. Because this document is a joint EIR/EIS, significant irreversible environmental changes must be addressed.

8.6.2 Analysis from ESP EIR/EIS

The ESP EIR/EIS addressed irreversible and irretrievable commitments of resources, defining irreversible commitments as those that could be recovered at the end of the 100-year life of the project. Resources that would be irretrievably committed would be those consumed, destroyed, or otherwise degraded during construction, operation, maintenance, and abandonment of the Proposed Action, and could not be retrieved or replaced during the life of the project or beyond. The ESP EIR/EIS identified the following issues as involving both irreversible and irretrievable commitments:

- Biological Resources (loss of vegetation communities and sensitive plant and animal species)

- Cultural Resources (loss of cultural resources including important Native American values)
- Paleontological Resources (loss of fossils with resource sensitivity)
- Recreation (loss of some recreation capacity during construction)
- Traffic/Transportation (commitment of incremental increase to existing traffic levels due to construction/operation/recreation traffic; loss of some existing roadways due to inundation with Moosa alternative)
- Socioeconomics (commitment of construction labor force)
- Energy (consumption of fuel during construction and operation)

The ESP EIR/EIS identified the following issues as involving irreversible but not irretrievable changes:

- Aesthetics/visual quality (degradation of natural scenic quality)
- Air quality (degradation from fugitive dust emissions)
- Land use /agriculture (conversion of agricultural land and open space)
- Geology/seismicity and mineral resources (sedimentation and erosion, sand and gravel resources)
- Water resources (dedication of water to storage)

Noise, public utilities/services, and public safety were identified as issues that would not involve irreversible or irretrievable changes.

8.6.3 Analysis of CSP

8.6.3.1 Nonrenewable Resources

Implementation of the Carryover Storage and San Vicente Dam Raise Project (CSP) would result in an irretrievable commitment of nonrenewable resources and slowly renewable resources for construction and operational purposes, including (but are not limited to): lumber and other forest products; sand and gravel; asphalt; petrochemical construction materials; steel; copper; lead and other metals; and water. Energy resources would be used for construction, aggregate processing and batch plant operation, transportation of materials and workers to and from the site, heating and refrigeration of food and water on site for workers, as well as construction lighting and other associated energy needs. Insofar as fossil fuels (gasoline, diesel, oil) currently are the principal source of energy, the Proposed Action would directly reduce existing supplies of fuel, such as fuel oil, natural gas and gasoline. This consumption would end upon completion of the project, but nevertheless represents a long-term commitment to consumption of essentially nonrenewable resources. The resulting long-term benefits of enhanced water supply reliability justify this commitment, as discussed in Chapter 1.0 (Introduction) of this EIR/EIS.

8.6.3.2 Commitment of Future Generations to Similar Uses

Given the massive size of the dams for each of the alternatives, and the substantial investment in public funding for construction, it is unlikely that the areas committed to the dam(s) and reservoir(s) would be converted back to original conditions for many generations. Therefore, whichever alternative is selected, the land uses and resources present on site would be committed to use as a water storage facility. As noted above, the resulting long-term benefits of enhanced water supply reliability justify this commitment.

8.6.3.3 Environmental Accidents

Accidental spills of fuels, paints, or other construction-related materials might occur on site during construction. However, these types of accidents would be limited with implementation of the Water Authority's General Conditions and Standards Specifications for handling and disposing of hazardous materials during construction. These types of potential spills would not result in irreversible environmental changes.

The CSP would require blasting for aggregate production to provide materials for the dam raise. All blasting would be performed in accordance with the U.S. Office of Surface Mining Reclamation and Enforcement, which includes requirements that the operator distribute a blasting schedule, post blasting signs, and control access within blasting area. With these precautions, hazardous conditions resulting in irreversible environmental damage would not occur.

8.6.3.4 Irretrievable Commitments of Resources

Issue areas considered to represent irretrievable commitments of resources based on CSP environmental analysis are summarized below. Refer to the corresponding sections in Chapters 3.0, 4.0, and 5.0 of this EIR/EIS for detailed analysis of environmental impacts for these issues for the Proposed Action, Moosa 100K Alternative, and SV 50K/Moosa 50K Alternative, respectively. As noted above, the resulting long-term benefits of enhanced water supply reliability justify these commitments.

Air Quality

Given the length of the construction period, the resultant increase in air pollutants from construction activities for the CSP represents a long-term commitment to consumption of essentially nonrenewable resources.

Land Use/Agriculture

Given the length of time that a new reservoir on Moosa Canyon would be expected to be in place, there would be an essentially irretrievable loss of agricultural and residential land within the County where implementing carryover storage would inundate these types of uses. This

commitment would apply only to the Moosa 100K Alternative and SV 50K/Moosa 50K Alternative.

Biological Resources

For the Proposed Action and the other alternatives, the essentially permanent removal of vegetation and wildlife habitat for the (CSP) represents an irreversible commitment of these resources. The preservation and restoration of biological mitigation areas containing habitat of similar, equal or greater biological value via state and federal permits will ensure that these important resources are permanently protected on a regional basis. Some biological habitats would be temporarily disturbed during construction. Given sufficient time and proper management these areas would be expected to recover to a state approximating pre-disturbance conditions.

Paleontological Resources

Although monitoring and recovery of fossils discovered during construction would reduce potential impacts to less than significant, the permanent loss of any fossil resource from construction activities or inundation for the reservoir represents an irreversible commitment of these resources. This issue would apply to the Proposed Action and the other alternatives.

Mineral Resources

The Proposed Action would require excavation within mapped MRZ-2 and MRZ-3 areas, and inundation of areas mapped as MRZ-3. The Moosa 100K Alternative would require excavation within mapped MRZ-3 and MRZ-4 areas. Similar conditions would apply to the SV 50K and Moosa 50K components of the SV 50K/Moosa 50K Alternative, with less excavation of aggregate needed for the smaller dam raise at San Vicente Reservoir or the smaller dam construction at Moosa Canyon. Although the permanent loss of these mineral resources from excavation for dam construction or inundation would represent an irreversible commitment of these resources, it would be a valid use of the resources for a public water storage project.

Energy Use

This section evaluates energy use in terms of requirements for, and consumption of, nonrenewable energy resources and electrical energy associated with the Proposed Action and alternatives. This analysis is based on *Engineering Summary Reports* prepared by GEI (GEI, 2007c, 2007d and 2007e), which are available to the public for review at the Water Authority's San Diego office, and information obtained in consultation with the California Energy Commission and the San Diego Regional Energy Office (SDREO). Information for this section was obtained from an energy analysis technical report prepared by Scientific Resources Associated (SRA, 2007), which is included as Appendix I to this EIR/EIS.

Implementation of the Proposed Action, or any of the alternatives, would require both the consumption of nonrenewable energy resources to facilitate construction, and consumption of

electrical energy for operations. Of the nonrenewable energy resources listed in Section 8.6.3.1 above, fossil fuels (specifically diesel fuel), are evaluated in this section because they are the means by which the majority of the construction equipment would be powered. In addition, electrical energy would be supplied to the construction site through the operation of diesel-fired generators. Electricity would be used during construction and operation of the CSP to power the pumps for distributing carryover storage water and for performing annual reservoir operations.

Methodology

The following energy impacts were evaluated:

- Impacts from consumption of nonrenewable energy resources (fossil fuels) for construction equipment.
- Impacts from consumption of electrical power for dam and pump station operations during normal operations (average annual conditions).
- Impacts from consumption of electrical power for dam and pump station operations during the 2-month emergency event.

A quantitative and qualitative evaluation was used to compare energy demands for fossil fuel consumption and electrical power required for construction and operation of the CSP in comparison with levels of consumption and availability of energy for the San Diego region. Construction energy demands were calculated in terms of the amount of diesel fuel needed to construct the CSP components and to provide electrical power by on-site diesel generators. Construction activities would require the operation of heavy construction equipment, truck traffic, and construction worker travel to the site, all of which would be powered by petroleum. Average annual petroleum energy requirements for heavy equipment were estimated based on the assumption that the heating value of diesel fuel is 130,000 BTU/gallon (www.chevron.com, 2006), and the average brake-specific fuel consumption is 7,000 BTU/hp-hr (U.S. EPA, 1996), resulting in 0.05385 gallon/hp-hr of fuel consumption. Petroleum use in on-road vehicles was calculated based on the miles per gallon estimates in the EMFAC2002 model. Diesel fuel usage for the power generators was provided by the GEI *Engineering Summary Reports* (GEI, 2007c, 2007d and 2007e).

For operational energy demands, the principal use of energy for the CSP would be the requirement for pump station operation. Energy use during operation of pump stations would be required during withdrawal and addition of reservoir water to meet annual turnover and seasonal storage requirements for water quality maintenance; replacement of evaporative, seepage, and other losses; and exercising pump and valve facilities. The annual energy requirements were compared to an estimated demand of approximately 1.5 billion kilowatt-hours (kWh) for electrical energy in the year 2010 (SANDAG, 1994).

Affected Environment

San Diego County is projected to consume approximately 1.75 billion gallons of petroleum fuel, with 1.56 billion gallons of gasoline and 191 million gallons of diesel fuel contributing to the total projected fuel consumption (Caltrans, 2003). San Diego Gas & Electric (SDG&E) is the regional supplier of electrical power. SDG&E provides services to customers in San Diego County and the southern portion of Orange County. Future demands would be met by increased power purchases from outside the area and new generation within San Diego County. Existing electrical supplies for the Proposed Action and alternatives are limited to 12 kV facilities. According to information provided by SDG&E to the California Energy Commission, base demand is anticipated to be 22,786 gigawatt-hours (gWh) by 2010, with a projected growth in demand of 1.4 percent per year.

Thresholds of Significance

Fossil Fuel Consumption

A significant construction impact would occur if the CSP would require more than 5 percent of the region's annual demand for petroleum associated with transportation in the year 2010. This threshold was selected because most of the construction energy demands would be related to fuel usage for equipment and vehicular travel. A value of 5 percent was selected because the Proposed Action or alternatives represent one of between 20 and 30 projects that could be implemented during the CSP construction period (refer to Tables 3.2-1 and 4.2-1).

Electrical Energy Demand

A significant impact would occur for average annual or emergency operations if the CSP would require more than 3.4 percent of the region's non-defense, public services related electrical energy needs in the year 2010. This threshold was selected because these electrical energy demands are projected by the *San Diego Regional Energy Strategy 2030* (SDREO, 2003) to increase by 3.4 percent per year.

Wasteful Energy Use (Qualitative)

Criteria for the significance of energy impacts were also based on whether the consumption would be wasteful. A qualitative measurement was used based on the assumption that wasteful consumption would result if the project design did not incorporate measures using energy conservation.

Analysis of Proposed Action

Impacts from Fossil Fuel Consumption for Construction Equipment

Under the Proposed Action, two alternative construction scenarios have been considered. The first scenario involves development of an on-site quarry to provide aggregate materials for the

dam raise. The second scenario involves importing of aggregate materials via heavy-duty trucks. The two alternatives would result in differences in construction requirements and, therefore, nonrenewable energy usage associated with construction.

For purposes of this analysis, it is assumed that both alternative construction scenarios would require approximately five years. Table 8.6-1 presents a summary of the estimated average annual petroleum requirements for construction of the Proposed Action for the on-site quarry options and the off-site quarry option. As shown in Table 8.6-1, diesel fuel consumption for the off-site quarry option (19.7 million gallons) would be greater than for the on-site quarry options (17.4 million gallons); however, both options would be less than 5 percent of the annual regional demand. Therefore, the energy impacts from fossil fuel consumption during construction of the Proposed Action would be less than significant.

Table 8.6-1. Average Annual Construction Petroleum Requirements for Proposed Action

Alternative	Construction Requirement for Petroleum (gallons)	Regional Demand for Petroleum (gallons)	Percentage of Regional Demand
Proposed Action – On-Site Quarry			
Construction Heavy Equipment	10,175,518		
Generators	2,900,000		
On-Road Trucks	936,225		
Worker Vehicles (gasoline)	3,375,730		
<i>Total</i>	<i>17,387,473</i>	<i>1,751,000,000</i>	<i>0.99</i>
Proposed Action – Off-Site Quarry			
Construction Heavy Equipment	10,064,668		
Generators	2,600,000		
On-Road Trucks	3,768,435		
Worker Vehicles (gasoline)	3,299,325		
<i>Total</i>	<i>19,732,428</i>	<i>1,751,000,000</i>	<i>1.13</i>

Source: SRA, 2007

Impacts from Consumption of Electrical Power for Operations

Estimates of annual electrical consumption for the Proposed Action would remain the same as estimated for the ESP (Table 8.6-2). Normal operations and emergency operations associated with the expanded reservoir are described below. With regard to pumping facilities, pumps are used to withdraw water from the reservoir into the Water Authority's distribution facilities (during both average and emergency conditions), and to fill the Moosa Reservoir during annual operations. As shown in Table 8.6-2, the estimated annual electrical consumption for operation of the Proposed Action would be less than 3.4 percent of the regional electrical energy demand in the year 2010. Therefore, the energy impacts from electrical consumption during operation of the Proposed Action would be less than significant.

Table 8.6-2. Annual Electrical Power Consumption by Component for the Proposed Action

Component	Estimated Annual Consumption, kWh
San Vicente Dam	9,000
Pump Station 1	3,514,000
Total	3,523,000
Estimated Regional Demand (Year 2010)	1,500,000,000
Percentage of Regional Demand	0.23

Source: SRA, 2007

Normal Operations. Water enters San Vicente reservoir by precipitation or by deliveries from the Water Authority's First Aqueduct. Water is withdrawn from the reservoir by the San Diego Pipelines 1 and 2, which convey the water to the City's Alvarado Water Treatment Plant via the El Monte Pipeline. The largest increase in reservoir level in any 12-month period between 1975 and 2005 occurred in 1997-98, when the reservoir level rose about 35 feet, from about 610 feet AMSL to 645 feet AMSL. The largest decrease in reservoir level in any 12-month period between 1975 and 2005 occurred in 1983-84, when the reservoir level dropped about 30 feet, from about 650 feet AMSL to 620 feet AMSL.

The City has collected reservoir storage data since the time of dam construction in the 1940s. Based on this data, the amount of water entering the reservoir has averaged about 7,850 AF per year, with a median of about 2,470 AF per year. However, the amount for any one year has varied widely, ranging from a low of 94 AF in 1956 to a maximum of 70,005 AF in 1980. Runoff is concentrated in the winter months, with the most runoff in any one month being 31,885 AF in February 1980.

Reservoir losses from net evaporation (gross evaporation minus rainfall that lands on the reservoir surface) have averaged about 38 inches per year at San Vicente Reservoir. The net evaporation depends, in part, on the surface area of the reservoir which varies with reservoir level. For a typical reservoir surface area of 1,400 acres, the estimated net evaporation loss would be about 4,400 AF per year.

Ongoing construction of new conveyance facilities by the Water Authority (separate from the CSP) will increase the ability to add and withdraw water into/from San Vicente Reservoir. These conveyance facilities include the San Vicente Pipeline, San Vicente Pump Station, and Surge Control Facility. Additional conveyance facilities as part of the Proposed Action include new outlet works for the raised dam and interconnection pipelines downstream of the dam. Water would enter the expanded reservoir by deliveries from the Water Authority's First Aqueduct and Second Aqueduct (via the San Vicente Pipeline), as well as from precipitation. Water would be withdrawn from the expanded reservoir by the San Vicente Pipeline/Pump Station system as well as by San Diego Pipelines 1 and 2.

As is the case for the existing reservoir, the storage volume in the expanded reservoir would vary from month to month, and from year to year. Future reservoir fluctuations would depend on

many factors. For example, scenarios of possible reservoir elevations and storage volumes for a 12-month period in year 2030 were evaluated in the GEI *Engineering Summary Report* (GEI, 2007). Actual reservoir fluctuations would be determined jointly by the Water Authority and City on an annual basis.

Normal operation of the expanded reservoir would include withdrawal of water from the carryover storage pool during years of below normal availability of imported water and replenishment of the carryover storage pool during periods of above normal availability of imported water. Carryover storage operations would be identified each year as part of the review of the Reservoir Regulating Plan.

The new outlet works of the raised dam would have ports at various elevations to allow the City to selectively withdraw water at various water depths based on water quality considerations. Normal operation of the reservoir is expected to maintain TDS levels within an acceptable range. Monitoring of TDS levels would be performed on a routine basis, and the Reservoir Regulating Plan would consider the need for additional turnover of reservoir storage to control TDS levels.

Emergency Operations. The outlet works of the raised dam would include provisions to discharge reservoir water to the streambed downstream of the dam, if necessary, due to a dam safety emergency. The discharge rate of this system would be in compliance with guidelines established by the California Division of Safety of Dams. These guidelines indicate that the outlet works should be capable of lowering the height of a full reservoir by 10 percent in a 7 to 10 day period.

Electrical energy use would be required to provide power to gatekeeper's facilities and for operation of valves and gates associated with the outlet works. Estimates of electrical energy use under emergency operations were based on energy requirements to operate the lowest-level outlet gate at full normal reservoir head, and are included in the Pump Station 1 annual electrical power consumption in Table 8.6-2. Gates were assumed to be operated for 40 hours per year.

Analysis of Moosa 100K Alternative

Impacts from Fossil Fuel Consumption for Construction Equipment

Table 8.6-3 presents a summary of the estimated average annual petroleum requirements for construction of the Moosa 100K Alternative. As shown in Table 8.6-3, total diesel fuel consumption for this alternative (33.7 million gallons) would be less than 5 percent of the annual regional demand. Therefore, the energy impacts from fossil fuel consumption during construction of the Moosa 100K Alternative would be less than significant.

Impacts from Consumption of Electrical Power for Operations

The estimated annual consumption of electrical energy for the Moosa 100K Alternative would be 1,112,000 kWh. The estimated annual electrical consumption for each component of the Moosa 100K Alternative is listed in Table 8.6-4. As shown in Table 8.6-4, the total estimated annual

electrical consumption for operation of the Moosa 100K Alternative would be less than 3.4 percent of the regional electrical energy demand in the year 2010. Therefore, the energy impacts from electrical consumption during operation of the Moosa 100K Alternative would be less than significant.

Table 8.6-3. Average Annual Construction Petroleum Requirements for the Moosa 100K Alternative

Alternative	Construction Requirement for Petroleum (gallons)	Regional Demand for Petroleum (gallons)	Percentage of Regional Demand
Moosa 100K Alternative			
Construction Heavy Equipment	23,019,924		
On-Road Trucks	5,868,839		
Worker Vehicles (gasoline)	4,767,070		
<i>Total</i>	<i>33,655,833</i>	<i>1,751,000,000</i>	<i>1.92</i>

Source: SRA, 2007

Table 8.6-4. Annual Electrical Power Consumption by Component for the Moosa 100K Alternative

Component	Estimated Annual Consumption, kWh
Moosa Dam	10,000
Moosa Creek Pump Station	1,102,000
Total	1,112,000
Estimated Regional Demand	1,500,000,000
Percentage of Regional Demand	0.074

Source: SRA, 2007

Analysis of SV 50K/Moosa 50K Alternative

Impacts from Fossil Fuel Consumption for Construction Equipment

Table 8.6-5 presents a summary of the estimated average annual petroleum requirements for construction of the SV 50K/Moosa 50K Alternative. As shown in Table 8.6-5, the maximum total diesel fuel consumption for this alternative (47.4 million gallons) would be represented by the off-site quarry option of the SV 50K component combined with the Moosa 50K component, which would be less than 5 percent of the annual regional demand. Therefore, the energy impacts from fossil fuel consumption during construction of the SV 50K/Moosa 50K Alternative would be less than significant.

Table 8.6-5. Average Annual Construction Petroleum Requirements for the SV 50K/Moosa 50K Alternative

Alternative	Construction Requirement for Petroleum (gallons)	Regional Demand for Petroleum (gallons)	Percentage of Regional Demand
Moosa 50K Component			
Construction Heavy Equipment	20,579,015		
On-Road Trucks	5,547,611		
Worker Vehicles (gasoline)	4,151,350		
San Vicente 50K Component – On-Site Quarry			
Construction Heavy Equipment	8,316,439		
Generators	2,900,000		
On-Road Trucks	792,827		
Worker Vehicles (gasoline)	3,011,156		
<i>Total</i>	<i>45,298,398</i>	<i>1,751,000,000</i>	<i>2.59</i>
Moosa 50K Component			
Construction Heavy Equipment	20,579,015		
On-Road Trucks	5,547,611		
Worker Vehicles (gasoline)	4,151,350		
San Vicente 50K Component – Off-Site Trucked			
Construction Heavy Equipment	8,041,545		
Generators	2,600,000		
On-Road Trucks	3,431,080		
Worker Vehicles (gasoline)	3,011,156		
<i>Total</i>	<i>47,361,757</i>	<i>1,751,000,000</i>	<i>2.70</i>

Source: SRA, 2007

Impacts from Consumption of Electrical Power for Operations

The estimated annual electrical consumption for each component of this alternative is listed in Table 8.6-6. Estimates of annual electrical consumption for the SV 50K component of this alternative would remain the same as estimated for the ESP. The estimated annual consumption of electrical energy for the Moosa 50K component of this alternative would be 511,000 kWh. As shown in Table 8.6-6, the total estimated annual electrical consumption for the combined operation of the SV 50K/Moosa 50K Alternative would be less than 3.4 percent of the regional electrical energy demand in the year 2010. Therefore, the energy impacts from electrical consumption during operation of this alternative would be less than significant.

Potential Impacts from Wasteful Energy Use

Vehicular fuel consumption would be the largest single energy requirement for the construction phase of the Proposed Action and alternatives. One of the primary opportunities for energy conservation would be the regular maintenance of vehicles and equipment to maximize their fuel

efficiency. Construction practices and methods proposed for each of the components are generally the most current available, therefore, it is not anticipated that fuel used during construction would be wasted. Therefore, impacts from wasteful energy use would be less than significant.

Table 8.6-6. Annual Electrical Power Consumption by Component for the Moosa 100,000 Acre-Foot Alternative

Component	Estimated Annual Consumption, kWh
San Vicente Dam	9,000
Pump Station 1	3,514,000
<i>Subtotal</i>	<i>3,523,000</i>
Moosa Dam	10,000
Moosa Creek Pump Station	501,000
<i>Subtotal</i>	<i>511,000</i>
<i>Total</i>	<i>4,034,000</i>
Estimated Regional Demand	1,500,000,000
Percentage of Regional Demand	0.27

Source: SRA, 2007

8.7 Global Climate Change

8.7.1 Introduction

There has recently been a great deal of discussion regarding greenhouse gas (GHG) emissions and their potential effect on global climate change, otherwise known as: “global warming.” Although Governor Schwarzenegger signed Executive Order S-3-05 in 2005 proclaiming that California is vulnerable to the impacts of climate change, there is nothing in either the state (CEQA) or federal (NEPA) environmental guidelines that require a discussion of this topic, and no thresholds have yet been established for GHG emissions or for assessing potential impacts associated with GHG emissions, and it is unlikely that such thresholds could ever be developed to assess project-level effects on a global scale. In addition, although there are several pending cases in California courts regarding the treatment of this topic in CEQA documents, there is currently no case law providing guidance as to how such an analysis might be accomplished.

Recently, the state Attorney General’s office has asked that that individual projects analyze the potential effects of global climate change as part of the CEQA environmental review process. In addition, the Attorney General’s office filed suit against a number of automobile manufacturers seeking damages for vehicle emissions (*People v. General Motors Corp., C06-05755*), claiming that the emission of greenhouse gases is a public nuisance and interferes with public health and safety. The suit claims that these emissions are already resulting in impacts to the state’s economy and natural resources, ranging from declines in Sierra snowpack to increased pollution.

On September 27, 2006 Governor Arnold Schwarzenegger signed Assembly Bill 32 (AB 32) into law. The “California Global Warming Solutions Act of 2006” legislation noted that “global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of California.” (Health and Safety Code §38501(a)) §38501(a) also notes, “the potential adverse impacts of global warming include the exacerbation of air quality problems [and] reduction in the quality and supply of water to the state from the Sierra [Nevada] snowpack.” AB 32 charged the California Air Resources Board (CARB) with developing regulations on how the state should address this issue. Specifically, AB 32 requires that by January 1, 2008, the CARB must assess what GHG emissions were in 1990, and approve a limit that is equivalent to that level, which is to be achieved by 2020.

Most of the scientific models addressing this issue show that the primary effect of global warming on California’s climate would be a shift in stream-flow seasonality. A higher percentage of the winter precipitation in the mountains would likely fall as rain and, as a result, peak runoff would likely come a month or so earlier. The end result of this would be that the state may not have sufficient surface storage to capture the resulting early runoff, and so a portion of the current supplies would be lost to the oceans, rather than be available for use in the state’s water delivery systems. To date, the CARB, the state EPA, the U.S. EPA, nor any other appropriate governmental organizations, have developed guidelines or standards on how to prepare an assessment of potential environmental impacts for global climate change.

8.7.2 Global Climate Change

The term global climate change refers to the anticipated change in the average weather of the earth, which can be measured by wind patterns, storms, precipitation, and temperature. Historical records have shown that temperature changes have occurred in the past, such as during previous ice ages. There is some discussion whether a current pattern of increasing global temperatures reflects a different pattern than previous climate changes in rate and magnitude, and to what extent this could be attributed to an increase in the release of GHG emissions from human activities, such as electricity production and vehicle emissions. Regardless, California is a substantial contributor of global greenhouse gases; according to the California Energy Commission, California is the second largest emitter of greenhouse gases in the U.S. (after Texas). Transportation is the primary source, followed by electricity generation.

The reference gas for global warming is carbon dioxide; other greenhouse gases include methane, nitrous oxide, and assorted fluorocarbons. The natural sources of carbon dioxide come from decomposition of dead organic material; respiration of plants, animals, and other living organisms; evaporation from lakes and reservoirs; and volcanic eruptions. Anthropogenic (human-caused) sources of carbon dioxide come from burning coal, oil, natural gas, and wood. Carbon dioxide accounts for approximately 85 percent of total emissions, while methane and nitrous oxide account for an additional 14 percent. Each gas contributes to global climate change at a different relative rate. Methane has a global warming potential 21 times that of carbon dioxide, while nitrous oxide is 310 times more potent.

Most of the global warming research has centered on development-type projects, transportation projects, and construction impacts; however, some studies have recently looked at the potential effects of reservoirs as potential contributors or absorbers of carbon dioxide, methane, and other GHG emissions. In the case of the Proposed Action and the alternatives, the contribution to the cumulative impact would come from potential release of carbon dioxide, methane, and other gases from the decay of organic material submerged in the reservoir; releases due to fluctuating lake levels; and emissions associated with construction of the dam itself.

Most of the current research has focused on South American dams. Only one study has been done in California, which evaluated Shasta Lake, Lake Oroville, and New Melones reservoirs in northern California. Of these, Shasta Lake was identified as a potentially significant contributor of carbon dioxide (both through surface evaporation and from power generation). Lake Oroville's estimated emissions were much lower, while New Melones Reservoir was believed to absorb carbon dioxide, possibly because of differences in water acidity. Although natural lakes also are potential sources of emissions, the effect is believed to be greater in man-made reservoirs due to greater fluctuations in water level due to dam operations. Given the global nature of climate change, the ultimate solution will be the formation of a national or international policy that addresses GHG emissions and global climate change, rather than piecemeal state-by-state or city-by-city approaches. To that end, the United Nations has commissioned the International Panel on Climate Change (IPCC).

8.7.3 IPCC White Paper

In April 2007, the IPCC released its Fourth Assessment Report (IPCC 2007) regarding potential human impacts on global climate change. The report concluded that changes in the atmospheric abundance of greenhouse gases and aerosols, in solar radiation and in land surface properties alter the energy balance of the climate system. Since the release of the Third Assessment Report (TAR), new observations and related modeling of greenhouse gases, solar activity, land surface properties and some aspects of aerosols have led to improvements in the quantitative estimates of these impacts to global change. The conclusions are summarized as follows:

- Global atmospheric concentrations of carbon dioxide, methane and nitrous oxide have increased markedly as a result of human activities since 1750 and now far exceed pre-industrial values determined from ice cores spanning many thousands of years (see Figure SPM-1). The global increases in carbon dioxide concentration are due primarily to fossil fuel use and land-use change, while those of methane and nitrous oxide are primarily due to agriculture.
- Carbon dioxide is the most important anthropogenic greenhouse gas. The atmospheric concentration of carbon dioxide in 2005 exceeds by far the natural range over the last 650,000 years (180 to 300 ppm) as determined from ice cores. The annual carbon dioxide concentration growth-rate was larger during the last 10 years (1995 – 2005 average: 1.9 ppm per year), than it has been since the beginning of continuous direct atmospheric measurements (1960 – 2005 average: 1.4 ppm per year) although there is year-to-year variability in growth rates.

- The primary source of the increased atmospheric concentration of carbon dioxide since the pre-industrial period results from fossil fuel use, with land use change providing another significant but smaller contribution.

8.7.4 AEP White Paper

The Association of Environmental Professionals (AEP), a state-wide professional group, recently prepared a “white paper” (Hendrix and Wilson, 2007) on this issue for consideration by the Office of Planning and Research (OPR) and CARB. The AEP report notes that no single project can generate enough GHG emissions to significantly affect global climate change. Rather, global climate change is a cumulative impact; an individual project participates in this potential impact through its incremental contribution combined with the cumulative increase of all other sources of greenhouse gases. Until the passage of AB 32, CEQA documents did not generally evaluate impacts on global climate change.

The California Code of Regulations (CCR) Title 24 Part 6: *California’s Energy Efficiency Standards for Residential and Nonresidential Buildings* was first enacted in 1978. Although not specifically designed to address GHG emissions, these standards allow consideration and possible incorporation of new energy efficient technologies that could reduce emissions. Recently, the California Climate Action Team (CCAT) Report to the Governor proposed a path to reach specific GHG reduction targets. The CCAT report includes such strategies as: developing vehicle trip reduction strategies, providing multi-modal transportation options, implementing increased energy efficiency beyond Title 24 requirements, providing increased recycling, and incorporating green building technology.

8.7.5 Conclusions

Given the overwhelming scope of global climate change, it is unrealistic to expect that any single project, regardless of the size or scope, could have an individually discernable effect on global climate change. Rather, it is more appropriate to conclude that any project emissions would combine with other emissions across the state, the U.S., and the globe, to cumulatively contribute to global climate change.

Therefore, as the ability to quantifiably declare whether an impact to be significant or not significant implies some knowledge of the incremental effects is probably a number of years away, at best. To determine whether the Proposed Action or any of the Alternatives would have a significant impact associated with global climate change, in light of the fact that no numerical thresholds exists for such an impact, would be too speculative. For this reason, a determination of significance cannot (and should not) be made. It should be noted, however, that the Proposed Action, in mitigating for traffic, air, and other impacts, will help reduce the contribution to any potential cumulative impacts on global climate change.