4.8 WATER SUPPLY

Public utilities provided by the City include water services, wastewater conveyance and solid waste. Section 4.6, *Hydrology and Water Quality,* addresses potential impacts to storm drain infrastructure and water quality. Wastewater and solid waste are discussed in the Initial Study (Appendix A). This section is based on a water supply assessment prepared for the project pursuant to SB 610. The water supply assessment is contained in Appendix J.

4.13.1 Setting

According to the 2008 Biennial Water Supply Report, the City of Ventura obtains water from the following sources:

1. Ventura River surface and subsurface water intakes and four shallow wells (Foster Park)
2. Casitas Municipal Water District (Casitas)
3. Mound Groundwater Basin
4. Oxnard Plain Groundwater Basin (Fox Canyon Aquifer)
5. Santa Paula Ground Water Basin
6. Saticoy Yard Well

The City also holds a State Water Project entitlement of 10,000 acre-feet per year (AFY). To date, the City has not received delivery of its allotment. In 1998 the City became a signatory to the SWP Monterey Amendment. The amendment allows the City to sell back surplus water to the SWP using a Turn-Back Pool method, which the City has participated in. In 2008, the State allowed one water contractor to sell its surplus SWP water directly to another water contractor (Butte County-Palmdale Agreement). The approval of this agreement has given the City the ability to review its options in short-term sales of its surplus SWP water.

The City manages its water resources conjunctively. Conjunctive use is the practice of first utilizing surface supplies (which are lost to the ocean if not used when they are available) before groundwater supplies (which can be stored for use when the surface supplies are not plentiful). Groundwater is used to provide for seasonal demands and as a source during drought periods. Therefore, the City will generally utilize its water supplies in the following order: Ventura River, Lake Casitas, and groundwater basins. In addition, the City provides reclaimed water from the Ventura Water Reclamation Facility to two municipal golf courses, the Ventura Marina area and private customers for landscape irrigation. The City's Historic and Projected Water Source Supply Availability is shown in Table 4.8-1. The City's current water supply is about 28,000 AFY (Table 4.8-1). The installation of the Saticoy County Yard Well and Saticoy Well #3 will increase redundancy and increase supply by 2,400 acre-feet/year.

Historic water use by the City's population is estimated at 0.22 AF per capita prior to mandatory water conservation measures such as low-flow plumbing fixtures. Following implementation of these measures, per capita annual water usage for the period between 1994 and 2004 is 0.18 AF. Future projected demand within the City based on population growth is shown in Table 4.8-2.

Table 4.8-1
Historic and Projected Water Source Supply Availability (Acre Feet) [1]

Year	Surface Water		Ground Water				Total Water Supply
	Lake Casitas [2]	Ventura River [3]	Mound Basin [4]	Oxnard Plain Basin [5]	Santa Paula Basin [6]	Saticoy County Yard Well [7]	
1980	7,544	7,276	0	5,198	2,129	0	22,147
1985	9,099	5,493	2,360	6,172	46	0	23,170
1990	6,175	2,859	4,365	5,749	0	0	19,148
1995	1,622	9,042	2,169	2,603	2,594	0	18,030
2000	5,836	6,779	4,579	2,674	1,698	0	21,566
2001	6,292	5,727	4,030	905	2,006	0	18,960
2002	7,127	5,951	3,721	1,978	1,157	0	19,934
2003	4,912	6,722	5,546	2,898	316	0	20,394
2004	6,833	6,118	4,773	2,391	2,183	0	22,298
2005	7,115	1,293	3,716	4,728	2,046	0	18,898
2006	5,398	2,244	4,102	5,348	1,068	0	18,160
2007	6,649	1,966	3,521	5,314	1,263	0	18,713
2008	8,000	6,700	5,700	4,600	3,000	0	28,000
2013	8,000	6,700	5,700	4,100	3,000	2,400	29,900
2018	8,000	6,700	5,700	4,100	3,000	2,400	29,900
2023[8]	8,000	6,700	5,700	4,100	3,000	2,400	29,900
2028[8]	8,000	6,700	5,700	4,100	3,000	2,400	29,900
2033[8]	8,000	6,700	5,700	4,100	3,000	2,400	29,900

Source: City of San Buenaventura, 2008 Biennial Water Supply Report, Table 1

[1] Includes treated and raw water; excludes reclaimed water supply.

[2] Lake Casitas is the City's total past supply including raw water and oil users; projected supply is the City's anticipated water availability for in-district use.

[3] Ventura River future supply is the average long-term production per the Evaluation of Long Term Alternative Water Sources, James M. Montgomery, June 1993.

[4] Mound Basin Future supply is 75 percent of well pump capacity within basin.

[5] Oxnard Plain Basin future supply is based on GMA restricted extraction limits (rounded to nearest 100 AF)

[6] Santa Paula Basin future water supply is the pumping allocation of the Stipulated Judgement.

[7] Saticoy County Yard Well supply is 75% of design maximum pump output capacity. The well is located in the Oxnard Forebay Basin.

[8] Projections for 2023, 2028, and 2033 were not included in the 2008 UWMP; however, to assure a 20-year projection is included in this analysis, water supply is assumed to remain as allocated in the preceding years.

A comparison of the overall supply as indicated in Table 4.8-1 with service area demand as indicated in Table 4.8-2 results in a determination that projected available supplies are adequate to meet projected service area demands (see Table 4.8-3).

Table 4.8-2
Projected Service Area Water Demand (Acre Feet)
(Normal Year, Weatherwise)

Year	Est. Water Service Area Population [1]	Per Capita Usage AFY [2]	Treated Water Demand [2]	Raw Water Demand [3]	Total Water Demand
2008	112,006	0.18	20,161	1,000	21,161
2013	116,920	0.18	21,046	1,000	22,046
2018	122,052	0.18	21,969	1,000	22,969
2023[4]	129,744	0.18	23,354	1,000	24,354
2028 [4]	137,723	0.18	24,790	1,000	25,790
2033	146,193	0.18	26,315	1,000	27,315

Source: Table 4, 2008 Biennial Water Supply Report.
[1] Service Area population from DOF reflecting an average annual growth rate of 0.88% plus a 0.35% average annual growth rate for unincorporated areas that are served by the City's supply and infrastructure (2008 Biennial Water Supply Report).
[2] Treated water demand is estimated population multiplied by 0.18 AF/capita based on 1994-2007 average post mandatory water conservation per capita use from Table 2, 2008 Biennial Water Supply Report.
[3] Raw water demand projections include raw water and oil users. i
[4] Assumes growth continues at the rate of 0.88% within the City and 0.35% within unincorporated areas served by the City.

Table 4.8-3
Projected Service Area Surplus (AFY)
(Normal Year, Weatherwise)

Year	Projected Supply	Projected Demand	Surplus
2008	28,000	21,161	6,839
2013	29,900	22,046	6,954
2018	29,900	22,969	6,931
2023	29,900	24,354	5,546
2028	29,900	25,790	4,110
2033	29,900	27,315	2,585

The residential sector of the City is comprised of single and multi-family residential customers. Residential uses comprise about 64% of the overall consumption (2005 UWMP). The commercial sector is comprised of gas stations, large shopping complexes, auto dealerships, restaurants, business parks, office buildings, hotels, and hospitals. The commercial sector comprises about 23% of the overall consumption (2005 UWMP). The industrial sector is comprised of the food industry and oil production, both of which constitute about 1% of the City's overall consumption (2005 UWMP). The institutional and governmental sectors are relatively stable and consist of the County Seat offices, a jail complex, City offices and yards as well as school facilities and churches. The institutional and governmental sector comprises about 4% of the overall consumption (2005 UWMP). Landscape, Agricultural and Other uses consist of 34 developed parks and 45 miles of linear parkways. In addition there are two 18-hole tournament class public golf courses served by reclaimed water for all turf areas. Agricultural uses served by the City comprise about 0.46% of the overall consumption, while the entire Landscape, Agricultural and Other sector utilizes about 8% of the total consumption (2005 UWMP).

The projected water supply in years 2008 through 2033 appears adequate to serve the demands of the City pursuant to planned growth increases, consistent with the 2005 General Plan, as the surplus of available water ranges from a low of 2,585 AFY in 2033 to a high of 6,954 AFY in 2013. In drought conditions, water supplies may be reduced as a result of reduced precipitation. The 2005 UWMP evaluated a three-year drought scenario to determine the City's ability to supply water under drought conditions. The City assumed that severe drought conditions (no rain and above average temperatures) would begin immediately and continue for three consecutive years. Planned water sources for fiscal year 2005, reflecting capacity of current facilities were used as an average normal water year base for estimating purposes. It was also assumed that demand would not be reduced in response to the drought conditions. Available water supplies during the three year period were projected considering: 1) the current status of each existing source; and 2) the past response of each existing source to similar drought conditions. The single dry and multiple dry year supply and demand comparisons are shown in Table 4.8-4. Analysis of single dry water year supply vs. projected demand over a 20-year period is shown in Table 4.8-5.

Table 4.8-4
Single and Multiple Dry Year
Supply Reliability and Demand Comparison (Acre Feet)

Source	Average/Normal Water Year [1]	Single Dry Water Year [2]	Multiple Dry Years		
			Year 1	Year 2	Year 3
Ventura River [3]	6,700	2,859	2,859	1,430	700
Casitas [4]	8,000	7,090	7,090	7,090	4,960
Oxnard Plain GW [5]	4,600	4,400	4,400	4,400	4,400
Mound Basin GW [6]	5,700	4,365	4,365	2,838	2,270
Santa Paula GW [7]	2,600	3,000	3,000	3,000	3,000
Saticoy County Yard Well [8]	0	1,800	1,800	900	675
Total Source Capacity	27,600	23,514	23,514	19,658	16,005
Less Raw Water Demand [9]	1,000	1,000	1,000	1,000	1,000
Available Treated Water	26,600	22,514	22,514	18,658	15,005
Total Treated Water Demand [10]	**19,766**	**19,766**	**19,766**	**19,937**	**20,109**
Demand Delta	6,834	2,748	2,748	-1,279	-5,104
Banked Groundwater Used [11]	0	0	0	1,300	5,120
Surplus Available for Banking [12]	**6,834**	**2,748**	**2,748**	**21**	**16**

Source: Table 6-1, 2005 UWMP

[1] From Table 3-6, 2005 UWMP (See Table 4.8-1). Year 2005 data with adjustment to Ventura River to reflect capacity of current facilities with a full basin.

[2] Rainfall in 1990 was 5.53 inches, well below the yearly average of 15 inches. For a single dry water year, 1990 historical data is used for the Ventura River and Mound Basin (ref. Table 3-6). Casitas reflects Stage 2 allocation, Oxnard source reflects the future available supply per GMA Ordinance. Santa Paula Basin reflects allocated amount per UWCD agreement and Saticoy Yd Well reflects 75% of average year (see Table 3-8).

[3] Ventura River available supply in Year 1 reflects the single dry water year. Year 2 is 50% of Year 1. Year 3 is the worst-case available annual yield per the Comprehensive Water Resources Management Plan.

[4] Casitas available supply during Year 1 and 2 reflects stage 2 allocation with year 3 reflecting stage 5 allocation.

[5] Oxnard Plain available supply assumed to be the City's allocation at 80% per GMA Extraction Reductions (Table 3-2).

[6] Mound Basin available supply for year 1 is assumed to be the single dry water year, decreasing in Year 2 by 35% based on 1990/1991 historical data. Year 3 reflects a 20% decrease of year 2.

[7] Santa Paula Basin Available supply assumed to be City's allocated amount per agreement with UWCD.

[8] Saticoy County Yard Well year 1 is assumed to be 75% of average year. Year 2 at 50% of year 1 and year 3 at 75% of year 2.

[9] From Table 4-4, 2005 UWMP (see Table 4.8-2).

[10] From Table 4-4, 2005 UWMP (see Table 4.8-2). Average and Single Dry Year reflects per capita use of 0.18 to projected 2005 population. The three multiple dry years also reflect 0.18 per capita water uses to extrapolated population estimates. (Population year 1 = 109,812; year 2 = 110,759; year 3 = 111,714).

[11] Reduced water demands have allowed the City to store 35,447 AF in the GMA bank at the end of year 2004. The use of banked groundwater would reduce our reserve but allow the City to meet its treated water demand.

[12] Surplus for banking is the lesser of net supply or GMA allocation amount.

Table 4.8-5
Summary of Projected Single Dry Water Year Demand and Supply
(Five Year Increments in Acre Feet)

Year	Projected Planning Area Population [1]	Projected Water Demand [2]	Projected Single Dry Water Year Supply [3]	Difference (Supply-less-demand)
2008	112,006	21,161	25,464	4,303
2013	116,920	22,046	25,464	3,418
2018	122,052	22,969	25,464	2,495
2023	129,744	24,354	25,464	1,110
2028	137,723	25,790	25,464	-326
2033	146,193	27,315	25,464	-1,851

Source: Table 6-2, 2005 UWMP
[1] Projected planning area population is from Table 4.8-4, 2008 Biennial Water Supply Report (see Table 2).
[2] Projected water demand is from Table 4.8-2.
[3] Projected water supply is from Table 6-1, 2005 UWMP (see Table 4.8-4). For a Single Dry Water Year (23,514 a/f) reduced by 300 a/f, per GMA Extraction Requirement. Plus the New Saticoy Well #3 (Ref. Table 3-8, 2005 UWMP - 2,250 a/f).

Table 4.8-6 provides a summary of single dry water years in 5-year increments over twenty years, compared to projected service area water demand.

Table 4.8-6
Summary of Projected Multiple-Dry Three Year Water Demand and Supply
(Five Year Increments in Acre Feet)

Year	Projected Planning Area Population[1]	Projected Water Demand[2]	Projected Supply Multiple-Dry Water Years[3]	Difference (Supply-less-Demand)	Banked Groundwater December 2004	
					Standalone[4] 35,447	CUM[5] 35,447
2008	112,677	21,282	25,764	4,482	39,929	39,929
2009	113,648	21,457	20,783	-674	39,256	39,256
2010	114,629	21,633	16,549	-5,084	34,171	34,171
2013	116,920	22,046	25,464	3,418	38,739	37,464
2014	118,358	22,304	20,483	-1,821	36,868	35,592
2015	119,814	22,567	16,549	-6,018	30,878	29,603
2018	122,052	22,969	25,464	2,495	37,810	31,965
2019	123,553	23,240	20,483	-2,757	35,001	29,157
2020	125,072	23,513	16,549	-6,964	28,066	22,221

Table 4.8-6
Summary of Projected Multiple-Dry Three Year Water Demand and Supply
(Five Year Increments in Acre Feet)

Year	Projected Planning Area Population[1]	Projected Water Demand[2]	Projected Supply Multiple-Dry Water Years[3]	Difference (Supply-less-Demand)	Banked Groundwater December 2004	
					Standalone[4] 35,447	CUM[5] 35,447
2023	129,744	24,354	25,464	1,110	36,839	23,613
2024	131,340	24,641	20,483	-4,158	33,051	19,825
2025	132,956	24,932	16,549	-8,383	25,128	11,902
2028	137,723	25,790	25,464	326	35,835	12,290
2029	139,417	26,095	20,483	-5,612	31,034	7,489
2030	141,132	26,404	16,549	-9,855	22,091	-1,454

Source: Table 6-4 (2005 UWMP); data for years 2028 through 2030 was extrapolated based on the average annual growth rate of 0.88% plus a 0.35% average annual growth rate for unincorporated areas that are served by the City's supply and infrastructure (2008 Biennial Water Supply Report).

[1] Projected planning area population is from Table 4-3 (2005 UWMP)

[2] Projected water demand is estimated population multiplied by 0.18 AF/capita based on 1994-2004 average post mandatory water conservation per capita use from Table 4-1 plus 1,000 AF/yr raw water demand.

[3] Projected water supply reflects Total Source Capacity from Table 6-1 (2005 UWMP) Multiple Dry Water Years plus the New Saticoy Well #3 (Ref. Table 6-3). Additionally, 2010 forward reflects Fox Canyon GMA Extraction Requirements (Ref. Table 3-2, 2005 UWMP)

[4] Each consecutive three year period reflects a standalone snapshot over the next twenty years ending in five year increments. Assumes only one of the three-year drought periods occur. For example if a drought occurred in 2013 through 2015 it is assumed that banked GMA credits would be available to support the water demand delta. As of 2007, the City's banked groundwater was 28,821 a/f.

[5] Reflects a cumulative reduction of banked groundwater for each five-year period over the next twenty years. This assumes five (5), three-year drought periods occur in the next twenty years. In this example the use of banked GMA credits would reduce the reserve, but allow the City to meet its treated water demand until the year 2030.

As indicated in Table 4.8-6, the existing groundwater banking program would allow the City to draft from the existing banked water, which would meet multiple dry year demands until the year 2030, assuming 5 droughts, each having multiple dry year demands. This scenario assumes that the banked groundwater supply is frozen at the December 2004 supply of 35,447 AF and that groundwater bank contributions do not increase beyond single and multiple dry year banking deposits (maximum of 2,748 AF/Year). However, if normal year groundwater bank deposits occur, such as the 6,834 AF/year surplus (surplus avail. for banking in an Average/Normal Water Year – See Table 4.8-4), banked groundwater supplies would be expected to exceed demand in 2030, indicating no cumulative shortage even with a three-year drought every five years.

4.9.2 Impact Analysis

a. Methodology and Significance Thresholds. The proposed project would have a significant impact on water supplies if demand associated with projected growth exceeds the available supply, thereby causing water shortages during average or peak demand periods. Impacts related to the proposed project would be considered substantial if growth under the

project would:

- *Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);*
- *Require or result in the construction of new water facilities or expansion of existing facilities, the construction of which could cause significant environmental effects; or*
- *Fail to have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed.*

As discussed in the Initial Study (Appendix A), implementation of the CMH Code would not be anticipated to substantially deplete the existing groundwater supply or interfere with groundwater recharge. In addition, as discussed in the Initial Study, implementation of the project would not require or result in the construction of new water facilities or expansion of existing facilities. Therefore, impacts to groundwater and construction of new water facilities would be less than significant. Therefore, the discussion below focuses on sufficient water supplies available to serve the project.

b. Project Impacts and Mitigation Measures.

Impact WS-1 The proposed project would increase water demand, with a net increase of 15.5 acre-feet per year (AFY) during Phase I and a net increase of 12.1 AFY during Phase II, for a total of 27.6 AFY. Projected supplies are sufficient to serve an additional 27.6 AFY through 2030 under normal, single dry and multiple dry year conditions. Therefore, impacts would be Class III, *less than significant*.

The proposed Community Memorial Hospital District Development Code facilitates the construction of an imminent project (a replacement hospital building) as well as other probable future development. The CMH Code would facilitate the construction of a new hospital building to house 252 hospital beds, which would essentially absorb the existing 242 beds for a net increase of 10 beds. In addition, the hospital would occupy 121,000 sf of the existing hospital building with non-essential services to support hospital functions, while the remaining 104,000 square feet of the existing hospital would be backfilled with new medical office uses. Other planned Phase I improvements include the construction of a 3,900 square foot retail liner building and construction of street and open space improvements within the Hospital District. Phase II improvements include the probable subsequent construction of an additional 162,950 square feet of new medical office uses in satellite buildings to create a medical services campus. Existing development that would be removed to accommodate new development includes 45,506 square feet of existing medical office uses and four single family residences. Table 4.8-7 shows the projected net increase in water demand associated with the project. As shown in Table 4.8-7, Total Phase I and Phase II development would create demand for about 143 AFY of water. However, because there is 115.4 AFY of existing uses that will be removed, the net increase in demand would be about 27.6 AFY.

Table 4.8-7
Projected Net Increase in Water Demand

Use	Size/Units	Demand Rate	Daily Demand (gpd)	Demand (AFY)
Phase I				
New Hospital	252 beds	406 gpd/bed	102,312	114.7
Hospital Support	121,000 sf	2,664 gpd/acre [1]	7,400	8.3
Medical Office backfill	104,000 sf	2,880 gpd/acre [1]	6,876	7.7
Retail	3,900 sf	2,088 gpd/acre [1]	187	0.2
Subtotal Phase I				**130.9**
Phase II				
Medical Office	162,950 sf	2,880 gpd/acre[1]	10,774	12.1
Total Phase I and Phase II				**112.7**
Existing Uses to be Absorbed and Demolished Under Phase I				
Existing Hospital	242 beds	406 gpd/bed	98,252	(110.1)
Existing Medical Office	45,506 sf	2,880 gpd/acre [1]	3,009	(3.4)
Residential	4 SFR	0.18 AFY/person [2]	1,671 [3]	(1.9)
Subtotal Existing Uses				**(115.4)**
Net Increase Phase I				**15.5**
Net Increase Phase II				**12.1**

Source: Adapted from Jensen Design & Survey, Inc. Community Memorial Hospital Future Developed Water Demand and Sewage Generation July 20, 2010; and Community Memorial Hospital District Development Code EIR, Section 2.0 Project Description, Table 2-4 Existing Development to be Demolished.
Notes:
[1] City of Simi Valley Water Master Plan, Table 3-3, 2/1986
[2] City of San Buenaventura, 2005 UWMP
[3] Assumes 2.6 persons/household pursuant to 2005 General Plan

Though not specifically accounted for as a planned project in the 2005 General Plan, the 522,850 square feet of projected new development (356,000 + 3,900 + 162,950) is within the commercial development projections of 2,655,000 square feet analyzed within the 2005 General Plan EIR and generally represents about 20% of the overall future commercial development through 2025. However, the Phase II development is not imminent in that there are no applicants for this development as of now. Thus, in the short term, the Phase I net increase in water demand will be about 15.5 AFY, while the longer term net increase in Phase II development is estimated at 12.1 AFY. The total overall increase of 27.6 AFY does not exceed normal year surplus indicated in Table 4.8-3. Normal year surplus, even with an additional demand of 27.6 AFY would be 2,557 AF in 2030 (see Table 4.8-3).

As shown in Table 4.8-4, under single dry year conditions, assuming 27.6 AF of water is removed from the 2,748 AF surplus that would be available for banking, 2,720 AF would still be available for banking. Under multiple dry year conditions, banked groundwater would be necessary to serve the project. As shown in Table 4.8-6, banked groundwater is sufficient to meet the City's needs until 2030, at which time a shortage would occur pursuant to the analysis

assumptions. However, the analysis assumptions are conservative in assuming 5 droughts over a 20 year period, each having multiple dry year demands. Moreover, the scenario assumes that the banked groundwater supply is frozen at the December 2004 supply of 35,447 AF and that groundwater bank contributions do not increase beyond single and multiple dry year banking deposits (maximum of 2,748 AF/Year). However, if normal year groundwater bank deposits occur, such as the 6,834 AF/year surplus (surplus avail. for banking in an Average/Normal Water Year – See Table 4.8-4), banked groundwater supplies would be expected to exceed demand in 2030, indicating no cumulative shortage even with a three-year drought every five years. Thus, projected supplies are sufficient to serve an additional 27.6 AFY through 2030 under normal, single dry and multiple dry year conditions.

Lastly, the project includes a number of features that will serve to reduce consumption by the new hospital, which comprises about 75% of the overall demand within the District. As documented in Section 2.0, *Project Description*, the Project is being designed to achieve credits related to the following water conservation techniques under the Green Guide to Healthcare Program.

- WEP1 Non-potable water for equipment cooling
- WE2.1 Water use measurement (separate meters for different uses)
- WE2.2 Motion sensor valves in patient sinks and public toilets
- WE2.5 Condensate reuse

The above measures would contribute to increased water conservation and reduced water demand through reuse of mechanical cooling waters, awareness of demand by metering specific uses, and motion sensors that would respond directly to needs of people.

Because available supplies would be sufficient to serve the anticipated demand within the Plan Area, impacts would be less than significant.

Mitigation Measures. Impacts would be less than significant without mitigation.

c. Cumulative Impacts. The above discussions account for cumulative development associated with buildout under the 2005 General Plan. As discussed above, even when considering the project in addition to growth envisioned in the 2005 General Plan, water supplies are adequate to serve projected future demands through a 20-year planning horizon in normal, single-dry and multiple dry years. Thus, the cumulative impacts are less than significant.