

Ventura County Star

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City Council to examine water report

Treatment facility upgrades will help meet needs, officials say

By Kevin Clerici, kclerici@VenturaCountyStar.com
October 18, 2004

Ventura has plenty of water and planned improvements will meet the city's growing needs for the next decade, a two-year study has found.

The study, however, does not address water quality or consistently increasing costs of treatment.



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"The quality of water we are producing and sending to our customers meets all state health standards," Public Works Director Ron Calkins said. "Some people say it doesn't taste very good because of all the minerals, but it does meet all state standards."

Calkins said the city "will be able to meet existing and increased demands for many decades."

The City Council is expected to adopt the 2004 Biennial Water Supply Report when it meets at 7 tonight at City Hall, 501 Poli St.

The city is on the eve of a \$20 million project to upgrade the city's treatment facility on Ventura Avenue. But Calkins warned that the improvements likely won't affect the water's taste.

"The average customer probably won't notice the difference because we are not going to remove the minerals," he said.

The debt service on a \$20 million low-interest loan from the state to pay for the plant improvements will fall on residents.

Although customers cover the total cost of water services, Calkins said the city should not have to significantly increase rates to pay for the project.

"We have to do modest increases to keep the water supply manageable," he said. "And we'll probably have to continue to do so."

According to the report from the city Public Works Department, Ventura's population of roughly 108,600 consumes slightly more than 20,000 acre-feet of water per year. The city's production capacity totals 26,500 acre-feet per year, collected through various sources including the Ventura River, numerous wells and Lake Casitas.

An acre-foot is roughly the volume of water needed to cover an acre of land, 1 foot deep, or roughly 330,000 gallons, officials said.

By 2014, officials project some 118,000 people will be using slightly more than 22,500 acre-feet of water, while the city's supply volume will number more than 28,000 acre-feet.

Interestingly, water consumption per household has decreased in recent years, the report found.

"Ventura today is using no more water than in 1970, even though our population has increased 70 percent," Calkins said.

The report says the decrease is largely attributed to conservation and structural improvements such as low-flow fixtures and low water-consuming appliances.



ADMINISTRATIVE REPORT

Date: September 29, 2004

Agenda Item No.: Advance

Council Action Date: October 18, 2004

To: RICK COLE, CITY MANAGER

From: RONALD J. CALKINS, DIRECTOR OF PUBLIC WORKS

Subject: 2004 BIENNIAL WATER SUPPLY REPORT

RECOMMENDED ACTION

Adopt the 2004 Biennial Water Supply Report by resolution, and certify that based on the report and planned capital improvements, there is a sufficient water supply to satisfy the City's water needs for at least the next ten years.

SUMMARY

The City's Comprehensive Water Resources Management Plan was adopted by City Council in December 1994. It is a compilation of water supply policy statements that provide guidance to develop and maintain a reliable water supply. In order to assure that adequate lead time was available to provide a supplemental water supply when needed, Council include in the Plan a requirement for preparation of a report assessing critical water supply conditions every two years and certification of the report by Council. The attached 2004 Biennial Water Supply Report was prepared for this year's certification. It includes projections of the City's future water supply, demands, and planned improvements. The report shows that the existing water supply and planned improvements are sufficient to meet future demands for at least the next ten years.

The attached resolution is provided for Council to certify the City's future water supply and to adopt the 2004 Biennial Water Supply Report.

ALTERNATIVES

Instead of the recommended action, Council could choose to not adopt the 2004 Biennial Water Supply Report and direct staff to make revisions to the report.

Administrative Report

September 29, 2004

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FISCAL IMPACTS

No budget impact is associated with the adoption of the 2004 Biennial Water Supply Report.

DISCUSSION

A. Comprehensive Water Resources Management Plan

In December 1994, the Comprehensive Water Resources Management Plan (CWRMP) was adopted by the City Council to provide guidance to develop and maintain a water system that would meet the goals and objectives of the City. The plan consists of a compilation of water supply policy statements. These policy statements provide direction with respect to larger water resource issues. A copy of the CWRMP is in the Council reading file.

As a part of the plan, a water supply monitoring requirement was adopted by the City Council. The purpose of the monitoring requirement is to provide advance warning of the need for implementation of an additional source of water. The monitoring requirement calls for an annual review by staff of critical water supply conditions and a Biennial Water Supply Report to be provided to the Council in the fall of even numbered years.

The purpose of the report is to certify that the City's current water supply and planned improvements are sufficient to satisfy the City's water needs for at least the next ten years. The CWRMP estimated that a ten-year time span would be necessary to fully implement a supplemental water supply project. This ten-year period was based on consideration of Council decision-making, public response, feasibility study phase, completion of construction and start up of facilities if a supplemental supply is needed.

B. Biennial Water Supply Report

The attached 2004 Biennial Water Supply Report was prepared to meet the monitoring requirement of the CWRMP. The report includes projections of the City's future water supply and demands. The current and projected water supplies used in the report include: (1) production from the Ventura River, (2) storage in Lake Casitas, (3) the balance in the Fox Canyon GMA groundwater bank, and (4) production from the Mound and Santa Paula Basins. The water demand figures used were determined from historical water consumption figures, anticipated water consumption trends and the estimated population growth for the water service area.

Administrative Report

September 29, 2004

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In addition to a Biennial Water Supply Report, staff annually reviews the health of the City's water supplies. Potential impacts to the water supply, which includes the condition of our facilities, agreements with other agencies and weather conditions, are tracked. By tracking these factors potential impacts can be identified before they occur. At this time the City's water supplies are very healthy. In two years when the next Biennial Water Supply Report is prepared, conditions will be reassessed and water supply and demand projections updated.

C. Capital Improvement Projects

The report also summarizes the capital improvement projects planned for the next five years. Some of the planned projects will repair or replace existing facilities to maintain the current production and treatment capacity. Other planned projects will provide new facilities to improve water quality to meet changing regulations, to increase production and treatment capacity to meet increases in demand, or to continue to the process of drought-proofing the City.

The Biennial Water Supply Report presented here highlights 5 projects which, based on preliminary analysis of community growth and water supply, will be essential in meeting City water needs by the end of the 10 year forecast period. These projects, Upgrade of Foster Park Production Facilities, Saticoy Conditioning Facility Renovation, Construction of Saticoy Well No. 3, Construction of Connecting Pipelines and North Wells Road Reservoir, will be required to meet average community demands on the system in 2014.

D. Certification

The attached report shows that the existing water supply and planned improvements are sufficient to satisfy the City's water needs for the next ten years. By adopting the 2004 Biennial Water Supply Report through the attached resolution, the City Council certifies that based on the findings of the report and planned capital improvements, there is sufficient water supply available with existing local resources, to satisfy the City's water needs for at least the next ten years. The next certification is scheduled to take place in the Fall of 2006.

Prepared by Don Davis,
Utilities Manager for



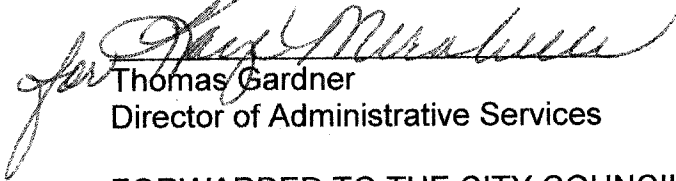
Ronald J. Calkins
Director of Public Works

Administrative Report

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Reviewed as to fiscal impacts


Thomas Gardner
Director of Administrative Services

FORWARDED TO THE CITY COUNCIL


Office of the City Manager

Attachment A: 2004 Biennial Water Supply Report

Attachment B: Resolution 2004-_____

[wain:biennial.admrpt04.doc]

RESOLUTION NO. 2004 - _____

**A RESOLUTION ADOPTED BY THE CITY COUNCIL
FOR THE CITY OF SAN BUENAVENTURA
ADOPTING THE 2004 BIENNIAL WATER SUPPLY
REPORT**

BE IT RESOLVED by the City Council of the City of San Buenaventura as follows:

SECTION 1: The City's Comprehensive Water Resources Management Plan, December 1994, requires that the Council make a biennial certification that the existing water supply and planned improvements are sufficient to satisfy the City's water needs for the ensuing ten years.

SECTION 2: The Comprehensive Water Resources Management Plan estimated a ten year time span would be necessary to fully implement a supplemental water supply project including Council decision making, public response, feasibility study phase, completion of construction and start up of the facility, if a supplemental supply is needed.

SECTION 3: The Council has received the 2004 Biennial Water Supply Report dated October 2004, which is incorporated into this resolution by reference.

SECTION 4: The report addresses the City's critical water supply conditions, demands, and planned water supply improvements. The report concludes that there is a sufficient water supply to satisfy the City's needs for the next ten years.

SECTION 5: The Capital Improvement Project Plan adopted March 15, 2004 provides for the capital improvements necessary to address the deficiencies noted in the 2004 Biennial Water Supply Report.

SECTION 6: The Council hereby certifies that based on the 2004 Biennial Water Supply Report and planned capital improvements there is a sufficient water supply to satisfy the City's water needs for the next ten years with existing local resources.

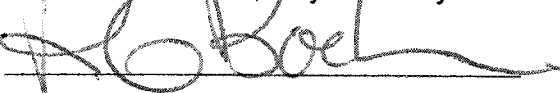
SECTION 7: The City Council of the City of San Buenaventura hereby adopts the 2004 Biennial Water Supply Report, for the City of San Buenaventura, dated October 2004 on file in the Office of the City Clerk.

PASSED AND ADOPTED this _____ day of _____, 2004.

City Clerk

Approved As To Form
ROBERT G. BOEHM, City Attorney

By _____



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CITY OF SAN BUENAVENTURA

2004 BIENNIAL WATER SUPPLY REPORT

SEPTEMBER 2004



2004 Biennial Water Supply Report

I. Executive Summary

This report is submitted in compliance with the City Council adopted 1994 Comprehensive Water Resources Management Plan (CWRMP). The CWRMP consists of a compilation of water supply policy statements to provide guidance related to the City's future water supply and demand. The intent of the plan is to ensure the City's ability to provide its customers with adequate water that meets regulatory water quality standards.

A water supply monitoring requirement is included in the CWRMP. This requirement calls for an annual review of critical water supply conditions and a biennial report to the Council for certification in the Fall of even numbered years. The purpose of the Biennial Water Supply Report is to certify that the City's existing water supply and planned improvements are sufficient to satisfy our needs for at least the next ten years and provide advance warning if a supplemental water supply is needed. The ten-year planning horizon represents the time needed to develop a supplemental water supply.

This 2004 Biennial Water Supply Report finds that the City's future water supply and planned improvements are sufficient to satisfy the City's water needs beyond this 10-year planning horizon.

The report includes projections of the City's future water supply and demands. The current and projected water supplies used in the report include: (1) production from the Ventura River, (2) supply from Lake Casitas, (3) production from the Mound Groundwater Basin, (4) pumping allocations in the Oxnard Plain Groundwater Basin, (5) pumping allocations in the Santa Paula Groundwater Basin and (6) future Saticoy County Yard Well. The water demand figures used were determined from historical water consumption figures, anticipated water consumption trends and the estimated population growth for the water service area.

The report also summarizes the capital improvement projects planned for the next five years. These planned improvements increase the City's ability to utilize existing water resources. The planned projects will improve the quantity and quality of the City's existing supplies and provide the system flexibility necessary for the City to support demands during a drought period when the need arises.

In addition to a biennial water supply report, staff annually reviews the health of the City's water supplies. Potential impacts to the water supply, which include the condition of our facilities, agreements with other agencies and weather conditions, are tracked. By tracking these effects potential impacts can be identified before they occur. At this time the City's water supplies are healthy. It is concluded that with planned capital improvements there is sufficient water supply to satisfy the City's water demands for at least the next ten years. In two years when the next Biennial Water Supply Report is prepared, conditions will be reassessed and water supply and demand projections updated.

II. Current and Projected Water Supply

There are presently five water sources that provide water to the City water system:

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 Groundwater Basin

The City has acquired a sixth source, a well located on the Santa Clara River east of Highway 118 (Wells Road). This location is not within either the Santa Paula Groundwater Basin or the Fox Canyon Aquifer. The well is complete and has been tested for production capacity and water quality. Capacity tests indicate the production from this well will be at least 2,500 gallons per minute (gpm). Pumping and control systems will be complete by mid-year 2005 and connecting pipelines to the Saticoy Conditioning Facility will be complete near the beginning of 2006.

The City also holds a State Water Project (SWP) entitlement of 10,000 acre-feet per year (AFY). To date, the City has not received delivery of its allotment, and it is not certain if or when facilities will be constructed to transport SWP water to the City. In 1998 the City became a signatory to the SWP Monterey Amendment. The amendment would allow the City, with other contractors, to sell surplus water back to the state, however litigation has prevented the terms of the amendment from being fully acted upon.

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 Wastewater Reclamation Facility to two municipal golf courses, the Ventura Marina area and private customers for landscape irrigation.

1. Ventura River

Surface water from the Ventura River is diverted through the City's Foster Park Facilities. The surface diversion, subsurface intake, and four shallow wells within the Ventura River collect water. Production from this source is a function of several factors including production capacity, local hydrology, environmental impacts, and the storage capacity of the Ventura River alluvium and upstream diversions. Currently, our surface diversion is unused due to the natural migration of the active river channel. Foster Park improvements, now in design, will replace production from our surface diversion with

additional wells. Even without production from the surface diversion, the City produced 6,722 AF from Foster Park in 2003, a year of below average rainfall.

The production from the Ventura River in 1992 was 9,874 AF, the highest annual water volume ever produced. The lowest production was 1,463 AF in the 1951 drought year. The Ventura River water source is highly variable and very dependent upon local hydrology. The CWRMP states the yearly yield is between 700 and 11,000 AF per year. For this report the average long-term water production of 6,700 AFY will be used, and is based on the Evaluation of Long Term Alternative Water Sources, James M. Montgomery, June 1993.

2. Casitas Municipal Water District (Casitas)

The western portion of the City is within the Casitas service area. Approximately 32 percent of the City's water accounts are located within the Casitas service area. Use of Casitas water is restricted to the volume of water used within its boundaries. The "safe yield" of Lake Casitas is defined to be the amount of water that can be removed from the lake each year without excessive risk that the lake will become dry. The safe yield of Lake Casitas is currently estimated to be 21,920 AFY, based on the critical historical dry period from 1944 to 1965. Studies by Casitas' engineering department have shown that this period represents the most critical dry spell for the Lake's watershed of all the years for which historical data is available.

To maintain future operation of Lake Casitas at safe yield, Casitas established an allocation program for its customers in 1992. The City's allocation can be as high as the in-district demand for Stage 1 (wet or average year), or reduced to 7,090 AFY for Stage 2 (dry conditions) and further incrementally reduced (Stages 3 and 4) to 4,960 AFY for Stage 5 (extremely dry conditions). Stage 2 is initiated when Lake Casitas storage drops below 95,000 AF and Stage 5 is initiated when levels drop below 65,000 AF. The lower allocation remains in effect until the storage is recovered to 90,000 AF. Total lake storage is approximately 254,000 AF. Lake Casitas storage as of August 2004 was 168,397 AF.

In July 1995 the City signed an agreement with Casitas, which established the City's minimum purchase at 6,000 AFY. The terms of the agreement are subject to the allocation program described above during drought periods. For this report the projected water supply available from Casitas is anticipated to average 8,000 AFY, the projected in-district demand.

3. Mound Basin

Two wells supply water from the Mound Groundwater Basin (Victoria Well No. 2 and Mound Well No. 1). Construction of Mound Well No. 1 was completed in 2003.

In March 1996 the City completed a project that included: 1) constructing Mound Basin

monitoring wells at Camino Real Park and Marina Park; 2) developing a database from historical records, and 3) identifying potential surpluses within the basin. This work was performed in conjunction with the United Water Conservation District. The report compiled as part of that project indicated that historical data supports a basin yield of at least 8,000 AFY during drought conditions as long as pumpage is reduced during wet years to allow water levels to recover. It is anticipated that the basin will be able to sustain a higher yield (at least 10,000 AF during drought periods), provided that future wells are located so as not to adversely impact the existing Mound Basin Wells. Future annual reports will further assess the operational yield of the basin.

For this report the future water supply from the Mound Basin is assumed to be 4,200 AFY based on 75 percent of the current pumping capacity of 5,600 AFY.

4. Oxnard Plain Groundwater Basin

Wells near the Buenaventura Golf Course have drawn from the Oxnard Plain Groundwater Basin since 1961. Additional wells have been constructed over the years with the most recent being completed in 1991. Currently, three wells produce potable water for the City's system. These wells pump from the Fox Canyon aquifer of the Oxnard Plain Groundwater Basin. Average annual yield from the Golf Course Wells over the past 15 years has been about 3,200 AFY.

The Fox Canyon Groundwater Management Agency (GMA) was created by state legislation in 1982 to manage local groundwater resources in a manner to reduce overdraft of the Oxnard Plain and stop seawater intrusion. A major goal of the GMA is to regulate and reduce future extractions of groundwater from the Oxnard aquifers, in order to operate the basin at a safe yield. In August 1990, the GMA passed Ordinance No. 5, which requires existing municipal groundwater users to reduce their extractions by five percent every five years until a 25 percent reduction is reached by the year 2010.

The City's baseline allocation was set by the GMA at 5,459 AFY, which was the average extraction from the Golf Course Wells for the period of 1985 to 1989. Beginning in 1992, baseline extractions set by the GMA were reduced by 5% to 5,186 AFY, in 1995 it was reduced to 4,913 AFY, and further in 2000 to its current allocation of 4,640. This allocation will further be reduced as follows:

<u>Years</u>	<u>Amount (AFY)</u>
2005	4,367
2010	4,094

Following wet weather conditions, water levels in the City's groundwater basins rise significantly. Conjunctive use strategies and customer water conservation have allowed the City to store 33,193 AF in the GMA bank as of the end of calendar year 2003. This storage bank makes it possible for the City to implement operational procedures that will allow the use of its groundwater supplies up to safe yield levels, and to use its

banked groundwater as an additional supply during future drought conditions. If the City were to use its banked water, it is estimated that the City could extract as much as 5,500 AFY based on 75% of the current pumping capacity of 7,300 AFY. However for this report, future supply is conservatively based on GMA restricted extraction limits listed in the preceding paragraph.

5. Santa Paula Groundwater Basin

The Saticoy Water System acquired by the City in 1968 included Saticoy Well No. 1, which draws water from the Santa Paula Basin. Due to casing failure, the well was destroyed and replaced in 1991 with a new well designated as Saticoy Well No. 2 in the same general location. Pumping capacity within the Santa Paula Basin is currently only 2,200 AFY based on 75% of the current pumping capacity of 2,900 AFY. With the addition of Saticoy Well 3 (completion anticipated 2006) to be located east of Highway 118 (Wells Road) we anticipate increasing pumping capacity in the basin to 6,400 AFY.

In March 1996, the City ended a five-year stalemate over the future use of the Santa Paula Basin. Under an agreement with the United Water Conservation District and the Santa Paula Pumpers Association (an association of ranchers and businesses), the City can pump on average 3,000 AFY from the Santa Paula Basin. The City is not limited to this allocation in any single year, but may produce seven times its average annual allocation (21,000 AF) over any running seven-year period. In addition, the City may pump an additional 3,000 AFY in case of an emergency resulting from a long-term drought situation. Therefore, for the purposes of this report, the future annual production from the Santa Paula Basin is estimated to be 3,000 AFY.

6. Saticoy Yard Well

The County of Ventura has relocated their maintenance yard to a site within the Saticoy Community contiguous to the City's water service area. In exchange for extraterritorial water service, the County has provided the City a well to offset their water demand. The well is expected to provide not only production capacity for serving the maintenance yard, but also significant additional system capacity. The Saticoy Yard Well is anticipated to begin production in 2006, with an estimated 75 percent of design production capacity of 2,262 AFY. The water demand for the maintenance yard is estimated to be 20 AFY.

III. Water Supply Summary

The following Table 1 summarizes the historical deliveries from each of the above sources, as well as projected deliveries to the year 2014. Projected figures are based on the water supply available from each source, and do not necessarily represent amounts currently produced.

Table 1: Historic and Projected Water Source Production and Supply Availability (acre-feet)

Year	Surface Water		Ground Water				Total Water Supply (7)
	Ventura River (1)	Lake Casitas (2)	Mound Basin (3)	Oxnard Plain Basin (4)	Santa Paula Basin (5)	Saticoy Yard Well (6)	
Historic Production							
1980	7,276	7,544	0	5,198	2,129		22,147
1985	5,493	9,099	2,360	6,172	46		23,170
1990	2,859	6,175	4,365	5,749	0		19,148
1995	9,042	1,622	2,169	2,603	2,594		18,030
1996	7,926	4,456	2,789	2,768	1,599		19,538
1997	7,052	7,089	213	3,452	2,025		19,831
1998	8,069	4,328	802	4,312	1,033		18,544
1999	6,419	7,061	3,955	1,621	1,669		20,725
2000	6,779	5,836	4,579	2,674	1,698		21,566
2001	5,727	6,292	4,030	905	2006		18,960
2002	5,951	7,127	3,720	1,978	1,157		19,933
2003	6,722	4,874	5,546	2,898	316		20,356
Projected Supply							
2004	6,700	8,000	4,200	4,600	3,000	0	26,500
2009	6,700	8,000	4,200	4,400	3,000	2,262	28,562
2014	6,700	8,000	4,200	4,100	3,000	2,262	28,262

Notes:

1. Ventura River future supply is the average long-term production based on analysis of the period from 1939 to 1982 per the Evaluation of Long Term Alternative Water Sources, James M. Montgomery, June 1993.
2. Includes the City's total past Casitas purchases in addition to raw water and oil recovery users; projected supply is the City's current in-district use.
3. Mound Basin future supplies are 75 percent of well pump rated output.
4. Oxnard Plain Basin future supply is based on GMA restricted extraction limits rounded to nearest 100 AF.
5. Santa Paula Basin future supply is the pumping allocation of the Stipulated Judgement.
6. Saticoy Yard Well future supply is 75 percent of design maximum pump output capacity.
7. Includes treated and raw water; excludes reclaimed water supply.

IV. Historic and Projected Water Demand

A. Historic Water Demand

Water consumption within the City (excluding raw water/oil company use) has decreased in recent years as shown by the per capita use figures in Table 2. The annual per capita usage from 1940 to 1970 averaged about 0.31 acre-feet per person (AF/capita). In the period 1976-1989 (pre-mandatory water conservation), the annual per capita use averaged about 0.22 AF/capita. In the period 1994-2003 (post mandatory water conservation), the per capita figure dropped to an average of 0.182 AF/capita. This decrease in per capita consumption is the result of structural improvements such as low flow fixtures and low water consuming appliances in some existing and all new housing and an active water conservation program adopted by the City in 1975 and further strengthened with mandatory regulations in 1990. Mandatory regulations were lifted in 1993, however water conservation efforts remain very effective.

Table 2: Historic Water Production and Population

Year	Total Prod. (AF) (1)	Raw Water Use (AF) (2)	Treated Water Use (AF) (3)	Est. Pop. Served by Water System (4)	Per Capita Use (AFY) (5)	Annual Rainfall (in.) (6)
1940	4,240	0	4,240	13,264	0.320	12.54
1950	5,307	0	5,307	16,534	0.321	13.34
1960	8,832	0	8,832	29,114	0.303	12.08
1970	21,524	4,473	17,051	57,964	0.294	13.92
1980	22,147	4,766	17,381	73,774	0.236	24.78
1990	19,148	2,317	16,831	94,856	0.177	5.53
1991	14,660	2,077	12,583	94,913	0.133	17.01
1992	16,469	1,625	14,846	95,626	0.155	20.91
1993	17,459	2,010	15,449	96,540	0.160	28.21
1994	18,980	2,000	16,980	97,154	0.175	11.47
1995	18,030	1,602	16,428	99,668	0.165	34.52
1996	19,538	1,500	18,038	100,482	0.180	13.81
1997	19,831	1,829	18,002	101,096	0.178	16.02
1998	18,544	1,769	16,775	101,610	0.165	43.25
1999	20,725	1,067	19,657	102,224	0.192	10.56
2000	21,566	1,129	20,481	103,238	0.198	17.04
2001	18,960	889	18,035	104,153	0.173	23.22
2002	19,933	968	20,901	105,267	0.199	7.24
2003	20,356	846	21,202	106,782	0.199	20.06
Average	1940-70				0.31	
Average	1976-89	Pre-Mandatory Water Conservation)			0.22	
Average	1994-2003	Post-Mandatory Water Conservation			0.182	

Notes for Table 2:

1. Total production includes all water produced by the City and purchased from the Casitas Municipal Water District, including raw water and oil recovery use.
2. Raw water use includes oil and raw water users.
3. Treated water use is total production less raw water use.
4. Population figures provided by City of Ventura Community Development Department and California Department of Finance. Estimated population served by water system for 1990-date includes areas outside of city limits served by the City.
5. Per capita use excludes raw water and oil use (treated water use ÷ population).
6. Annual rainfall is the average of measured precipitation for the water year (October 1st through September 30th) for four rain gauge stations throughout the City (Stations #66, #122, #167, and #222) as provided by the Ventura County Flood Control District.

B. Population Projections

Recent historical populations (see Table 2) are from adjusted Department of Finance figures for the City's Planning Area, including the County water service area. Projected populations used in this study (see Table 3) were provided by the City Community Development Department, and reflect the figures shown in the 1989 Comprehensive Plan for the City's Planning Area, adjusted to the 1990 and 2000 census. We have also included the portion of our water service area, which covers unincorporated areas adjacent to the City. These are slightly different than the population figures used in the City's 2002 Biennial Water Supply Report, due to recent adjustments by the Department of Finance.

It is important to note that the projected population figures used in this report are not intended to represent either support for or any commitment to this level of growth. Rather they are intended to provide a safe margin in planning for long-term water improvements that might be needed given the rate of growth that could be allowed under the 1989 Comprehensive Plan. Currently the City is going through the process of revising the Comprehensive Plan.

Table 3: Estimated Population Growth for Water Service Area

Year	Projected Planning Area Population
2004	108,651
2009	113,162
2014	118,295

Note: City population estimates are based on the U.S. 2000 Census and

a growth rate of 0.9%. Additional population for the unincorporated area served by Ventura's water system, is based on 2004 count of customers outside city limits and a growth rate of 0.6%.

C. Projected Water Demand

For planning purposes, in 1990 the City used 0.22 AF of water per capita per year based on the average pre-mandatory conservation per capita use data (see Table 2). Anticipated demand reductions, through long-term conservation programs, have lowered the per capita water usage factor. Estimated demand reductions due to conservation in 1990 were anticipated to be five percent in 1995 (0.209 per capita use), 10 percent in 2000 (0.198 per capita use), and 12 percent thereafter (0.194 per capita use). The figures in Table 2 show that the reductions assumed in 1990 have been exceeded and are now around 17 percent. Based on data from the past 10 years since mandatory conservation ended, the average per-capita usage is 0.182 AFY. For the purpose of this report 0.182 AFY per capita will be used to estimate future water demands.

In addition, raw water demand for oilfield injection has declined steadily since 1970. Average raw water usage for the past 5 years was 1,000 AFY. For the purpose of this report a future raw water demand of 1000 AFY will be used.

Applying this per capita demand factor to the projected populations provides an estimate of treated water demands for the next 10 years, as shown in Table 4. As stated, the numbers in Table 4 reflect the belief that there will be few substantive changes in the near future, with planned long-term improvements.

Table 4: Projected Water Demand (Acre Feet) - (Normal year, weatherwise)

Year	Est. Water Service Area Pop. (1)	Per Capita Usage AFY (2)	Treated Water Demand (2)	Raw Water Demand (3)	Total Water Demand
2004	108,651	0.182	19,774	1,000	20,774
2009	113,162	0.182	20,595	1,000	21,595
2014	118,295	0.182	21,530	1,000	22,530

Notes:

1. Estimated planning area populations are from Table 3.
2. Treated water demand is estimated population multiplied by 0.182 AF/capita based on the 1994-2003 average post-mandatory water conservation per capita use from Table 2.
3. Raw water demand projections include raw water and oil users.

V. Water Supply and Demand Summary

Table 5 summarizes the City's projected water demand and supply through the year 2014. Additional water supplies will not be needed until sometime after 2014 under average non-drought weather conditions.

Table 5: Summary of Projected Water Demand and Supply (Acre Feet) - (Non-Drought Conditions)

Year	Projected Planning Area Pop.(1)	Projected Water Demand(2)	Projected Water Supply(3)	Additional Water Supply Needed(4)
2004	108,651	20,774	26,500	No
2009	113,162	21,595	28,562	No
2014	118,295	22,530	28,262	No

Notes:

1. Projected planning area population is from Table 3.
2. Projected water demand is from Table 4, and includes oil and raw water use.
3. Projected water supply is from Table 1.
4. Additional water supply needed is the projected water supply less the projected water demand. Additional supply to meet water quality goals is not included.

Based on the above projection, the existing water supply and planned improvements are sufficient to satisfy the City's water needs for at least the next ten years.

VI. Planned Improvements

The City will continue to implement capital improvements and do resource planning for our water system. These improvements will increase production capacity and storage, improve our ability to move water from the diverse sources of supply to all points of use, improve water quality, reliability and safety. We anticipate an update of the Water System Master Plan during the 2004-05 fiscal year.

The availability of the facilities below are essential to meet future water production, storage and transport needs. For purposes of this report, we have assumed these projects will proceed as currently anticipated. Detailed system condition and hydraulic evaluations for both normal and drought condition operation are still to be completed. When completed these may change the projects on this list.

- Upgrade of Foster Park Production Facilities. This will include replacing the production capacity of the surface diversion with new wells. Upgrades of the facilities have been designed and are pending environmental approval. Construction should begin in 2006 and be completed by 2008.
- Saticoy Conditioning Facility Renovation. Upgrades to the facility, including the installation of an emergency generator, will provide capacity to treat production from two wells simultaneously.
- Construction of Saticoy Well No. 3. This new well is currently included with the upgrade of the Saticoy Conditioning Facility. Design is underway and completion is anticipated by 2006.
- Construction of Connecting Pipelines. Several system connections are still needed to enable efficient movement of water from sources to distant sections of the City.
- North Wells Road Reservoir. This 4 million gallons of additional storage will serve the eastern portion of the area to improve fire and domestic supply reliability.

Other projects currently included in the 5-year Capital Improvement Plan include both projects needed to maintain our existing water system infrastructure and projects planned to improve system efficiency and reliability. They include:

- Rehabilitate and upgrade mechanical/electrical system for Golf Course Well #3;
- Correction of distribution system dead-ends and complete system service loops;
- Replacement of aging cast iron mains;
- Continue modernization of and provide emergency backup power for the booster pump stations that deliver treated water to system storage; and
- Construct new pipeline improvements to include interties for the 210/330 and 210/430 zones and backup zone connections for the Pierpont-Harbor neighborhood.

Although additional water supplies are not needed at this time, the following system efficiency improvements will make the water system capable of supporting increased demands:

- Continue to work with participating agencies on the Ventura River Watershed and Habitat Conservation Plans for Steelhead Trout.
- Continue discussions with local agencies concerning our State Water Project Entitlement.

- Continue work towards development of Santa Paula Basin Operational/Management Plan with United Water Conservation District & Santa Paula Pumpers Association.
- Implement the recommendations in the West County Water Supply Reliability Study, which would provide an emergency connection between the Ventura and Oxnard water systems.
- Work with the Casitas Municipal Water District to formally define the City's water service in the North Ventura Avenue area.

VII. Certification

By adopting the 2004 Biennial Water Supply Report, the City Council certifies that based on the findings of this report, there is sufficient water supply available with existing local resources to satisfy the City's water needs for at least the next ten years. The next biennial certification review will take place in the Fall of 2006.

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