Final | June 2013

2013 Comprehensive Water Resources Report

Prepared for: Ventura Water

Prepared by: RBF Consulting,
a Company of Michael Baker Corporation

RBF CONSULTING
A Baker Company

2013 COMPREHENSIVE WATER RESOURCES REPORT

Final Report

Prepared for:
Ventura Water
501 Poli Street
Ventura, CA 93002

Prepared by:
RBF Consulting, a Michael Baker Company
5051 Verdugo Way, Suite 300
Camarillo, CA 93012

Contact: Kevin Gustorf, P.E.
(949) 472-3429

June 10, 2013

EXECUTIVE SUMMARY

Introduction

On July 26, 2010 Public Works conducted a workshop with City Council that included information on the City's current water supply issues. It was presented that with continued years of drought, tightening water restrictions and environmental responsibilities, Ventura's water supply was being impacted by several factors. These factors included and continue to include the following:

- The City's historical water rights to the Ventura River may be significantly limited as concern for the health of the endangered Southern California Steelhead and its habitat ecosystem restrict how much and at what time of the year this water source is available. Storm events over the past 15 years have restricted our ability to withdraw historical amounts from this source.
- City allocation from two groundwater basins, Oxnard Plain Basin and Santa Paula Basin, are increasingly regulated and monitored. Studies being conducted by the oversight agencies have indicated that potential overdraft and water quality issues may occur in the near future.
- The Mound Groundwater Basin has experienced water quality degradation and projections for reliable supply may be lower than originally anticipated.

A recommendation from the workshop was to provide a comprehensive evaluation of current and projected water supply needs.

In addition, as a part of this year's City Council Priority Projects, the Community Development (Planning) Department and Ventura Water have focused their time and energy on streamlining and documenting the development review process as it pertains to water and wastewater services. More specifically, we are working to:

- Ensure transparency and consistency to our customers,
- Create equity in assigning costs; and
- Protect the reliability of our water and wastewater infrastructure.

In order to provide a comprehensive evaluation of the City's current and projected water supply needs, there has been interdepartmental coordination to provide input and expertise on what development has taken place since the 2005 General Plan, the pace of proposed development and what water demands those developments may require. This Report will review previously developed water demand projections, anticipated water supplies and approved development projects and compare them to where

the City is today for each of these three categories. City staff is collaboratively looking forward to help plan the City's water resources to accommodate future development in the most responsible manner for its customers.

Purpose

The main purpose of this report is twofold. The report will identify water demand and water supply conflicts in various reports and will evaluate how current and future anticipated water demands match current and future anticipated water supply. City staff recognize the need to develop a process that tracks proposed development projects, consistently calculates the anticipated increase in water demand associated with each proposed development project, and the evaluates the impact on the current water supply. This Comprehensive Water Resources Report ("Report") is intended to be a tool in the development review process as it pertains to water supply and demand.

Previous Documents

As described in Section 1.B, one of the purposes of this Report is to identify the water demand and water supply discrepancies between the various previous reports published by the City, specifically the 2005 General Plan, 2010 Urban Water Management Plan and the 2011 Water Master Plan. A more detailed comparison is included in Section 1.D, and a summary of the year 2025 comparison is provided in Table ES-1.

Table ES-1
Year 2025 - Water Demand and Supply Projections from Previous Documents

Document	2025 Water Demand		2025 Water Supply	
	(AFY)	Notes	(AFY)	Notes
2005 General Plan Documents	27,421	Based on anticipated growth rate in General Plan (population x per capita use)	28,262	• All supply sources producing at maximum amounts. • Saticoy County Yard Well at 2,262 AFY. • No recycled water included.
2010 Urban Water Management Plan	24,270	Based on population projection x per capita use	24,700	• All supply sources producing at maximum amounts, except Casitas. • Casitas at 6,200 AFY (estimated in-District demand). • Saticoy County Yard Well at 0. • Recycled water at 700 AFY.
2011 Water Master Plan	22,708	Based on existing water consumption plus estimated demands calculated using demand factors (gpm/ac)	18,760 - 25,800	• Casitas: 4,960 AFY (current in-District demand) to 8,000 AFY (max). • Ventura River: 4,200 AFY (historical average) to 6,700 AFY (historical operational capacity). • Mound GW Basin: 2,500 AFY to 4,000 AFY (past 5-year low/high). • No recycled water included. • Oxnard GW Basin and Santa Paula Basin at max. • Saticoy County Yard Well at 0.

Current Water Supply

The City's potable water supply is derived from local groundwater basins, Lake Casitas and sub-surface water from the Ventura River. The City also has a 10,000 acre-foot per year allocation from the California State Water Project. To date the City has not received any of this water because there are no facilities to get the water to the City. There are presently five local water sources that provide water to the City water system:

- Casitas Municipal Water District (Casitas)
- Ventura River Foster Park Area (Foster Park)
    - Surface Water Intake
    - Upper Ventura River Groundwater Basin/Subsurface Intake and Wells
- Mound Groundwater Basin (Mound Basin)
- Oxnard Plain Groundwater Basin (Fox Canyon Aquifer)
- Santa Paula Groundwater Basin (Santa Paula Basin)

The City also provides recycled water from the Ventura Water Reclamation Facility (VWRF). The City's current reliable water supply is 19,600 AFY, although it could drop as low as 18,000 AFY at any time.

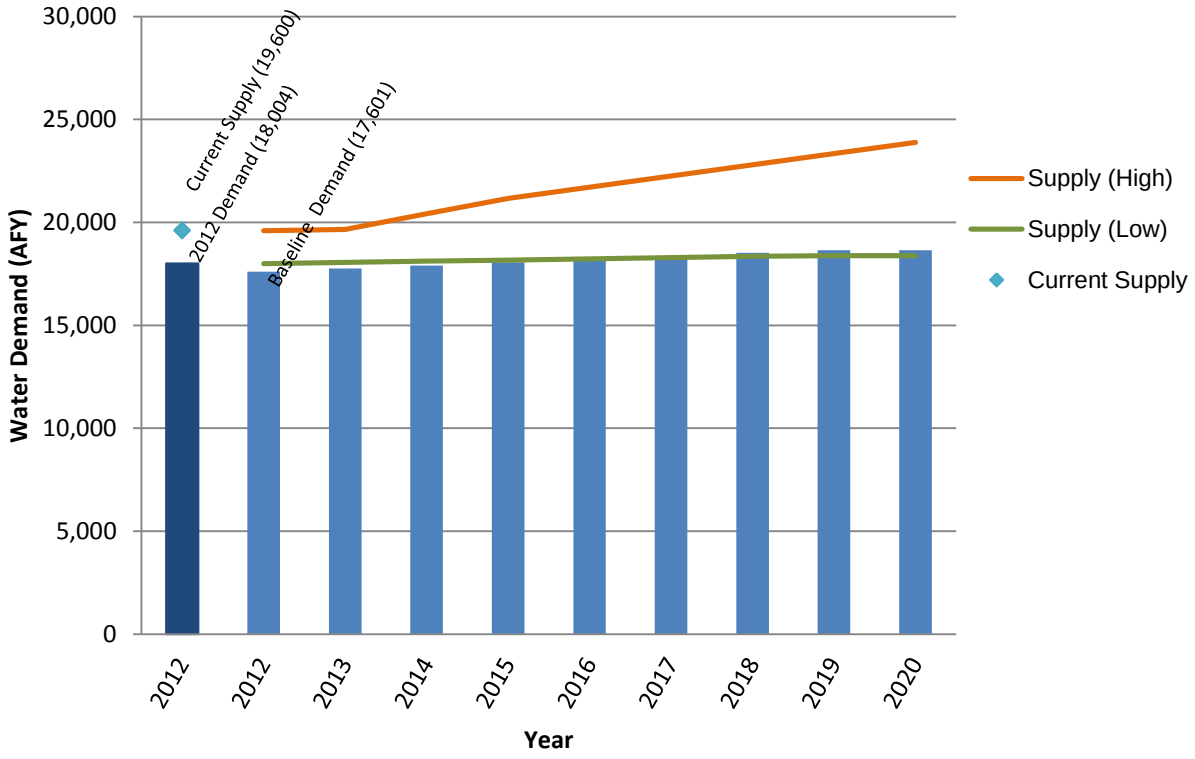
Estimated Water Demand

The City's total water consumption for the most recent complete calendar year (2012) was 18,004 AFY. Historical water consumption data was evaluated for the previous 10-year period to develop a baseline water demand condition. Based on a review of historical consumption data, it was determined that the most recent 5-year average of the annual water consumption would be used to establish the baseline water demand. This Report will utilize a baseline water demand of 17,601 AFY.

There are currently 47 projects that have received City approval for development. Of those 47 projects, a few are in construction, while the majority are approved for development. Utilizing water demand factors developed specifically for the City, based on historical data, it is estimated that the approved projects will require an additional 1,042 AFY of water supply, resulting in a total projected water demand of 18,643 AFY. Using an assumed absorption rate of 350 dwelling units per year (and an equivalent absorption rate for the non-residential development), it is estimated that the City will reach the projected demand condition in year 2019.

Figure ES-1 provides a graphical representation of the current water consumption, projected water demand through year 2020, and the anticipated water supply range over the same time period.

Figure ES-1
Demand vs. Supply Projection



Conclusions & Recommendations

Based on the City's current available water supply of 19,600 AFY, the City can meet the demands of the existing and approved development projects (18,643 AFY). However, at any time the available water supply could drop to an annual average of 18,000 AFY. In the circumstances where the water supply drops to the low end of the range, the supply is slightly (1%-2%) larger than the demand through year 2016, after which the water supply is less than the anticipated demand beginning in year 2017.

The results of this Report indicate that the spread between the current water demand and the current water supply is very tight, and in some conditions the supply could be less than the demand. This presents challenges for the City moving forward in the ability to allocate water supply to development projects that will generate additional water demands. The recommendations for the City moving forward include:

1. Track the total water consumption on an annual basis.
2. Re-calculate the 3-year, 5-year and 10-year water consumption averages on an annual basis.
3. Update the water supply portfolio on an annual basis.
4. Update the existing land use data on an annual basis. This can be done through a system that tracks the development projects as the transition from "Under Construction" to "Existing," and "Approved" to "Under Construction."
5. All future development projects should be evaluated based on current supply and demand conditions.
6. Use the City-specific water usage factors to calculate the water demand of all development projects as the projects proceed through the City process prior to approval.
7. Continue to develop water supply through demand side management, securing water rights, establishing an in-lieu fee ordinance, and continue to integrate new water supply sources into the City's portfolio.

Due to the wide range of demand and supply estimates in this initial analysis, it is clear that a thoughtful and multi-faceted approach to managing and planning for Ventura's water supply will be absolutely critical in the coming years to support economic growth and quality of life.

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2005-2012 Built Projects – Background Data

1. INTRODUCTION

A. INTRODUCTION

On July 26, 2010 Public Works conducted a workshop with City Council that included information on the City's current water supply issues. It was presented that with continued years of drought, tightening water restrictions and environmental responsibilities, Ventura's water supply was being impacted by several factors. These factors included and continue to include the following:

- The City's historical water rights to the Ventura River may be significantly limited as concern for the health of the endangered Southern California Steelhead and its habitat ecosystem restrict how much and at what time of the year this water source is available. Storm events over the past 15 years have restricted our ability to withdraw historical amounts from this source.
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A recommendation from the workshop was to provide a comprehensive evaluation of current and projected water supply needs.

In addition, as a part of this year's City Council Priority Projects, the Community Development (Planning) Department and Ventura Water have focused their time and energy on streamlining and documenting the development review process as it pertains to water and wastewater services. More specifically, we are working to:

- Ensure transparency and consistency to our customers,
- Create equity in assigning costs; and
- Protect the reliability of our water and wastewater infrastructure.

In order to provide a comprehensive evaluation of the City's current and projected water supply needs, there has been interdepartmental coordination at the City to provide input and expertise

on what development has taken place since the 2005 General Plan, the projects currently approved for development within the City and the potential for additional development through 2025. The City provided data to better determine the water demands those developments may require. This Report will review previously developed water demand projections, anticipated water supplies and approved development projects and compare them to where the City is today. City staff is collaboratively looking forward to help plan the City's water resources to accommodate future development in the most responsible manner for its residents.

B. PURPOSE OF REPORT

The main purpose of this report is twofold. The report will identify water demand and water supply conflicts in various reports and will evaluate how current and future anticipated water demands match current and future anticipated water supply. The City recognizes the need to develop a process that tracks proposed development projects, consistently calculate the anticipated increase in water demand associated with each proposed development project, and then evaluate the impact on the current water supply. This Comprehensive Water Resources Report ("Report") is intended to be a tool in the development review process as it pertains to water supply and demand.

Over the past several years, the City has prepared various documents that address water demand and water supply. More specifically, there are three documents that have been used as a reference document for both historical figures and future projections. The three documents are:

- 2005 General Plan, 2005 General Plan FEIR and 2007 Supplement
- 2010 Urban Water Management Plan (amended in 2011)
- 2011 Water Master Plan

Each of these reports was completed at a different time, with different data available and for a specific purpose and/or audience. An agency's water demands will vary from year to year depending upon a number of variables. In addition, the water supply availability will vary from year to year, especially in southern California, where in recent years the delivery and availability of both imported water supplies and groundwater have been legally challenged. Therefore, the information provided in each of these reports pertaining to water demand and water supply will show differences. Subsection D includes pertinent information on each of the three previous report, such as: the purpose of the report; the resources utilized for the report; the water demand

factors utilized and the estimated water demands based on those factors in each report and the anticipated current and future water supply in each report.

C. STUDY AREA

The City of San Buenaventura is located 62 miles north of Los Angeles and 30 miles south of Santa Barbara along the California coastline. The City is located within the County of Ventura, and bound by the City of Oxnard to the south, by unincorporated Ventura County to the east and north, and by the Pacific Ocean to the west. The northwest portion of the City is bound by the Ventura River, while the southern portion is bound by the Santa Clara River. The Ventura Freeway (101) bisects the City in the north-south direction, while the Santa Paula Freeway (126) runs east to west through the center of the City. The Ojai Freeway (33) runs along the northwestern edge of the City. The City currently occupies an estimated 21 square miles and has an estimated population of 109,000 persons. Exhibit 1-1 identifies the City of San Buenaventura boundary, the Sphere of Influence and General Plan boundary.

Ventura Water provides potable water service to a population of approximately 113,500 persons and has approximately 32,000 service connections. The City's existing water service area includes all portions within the City limits, as well as portions of unincorporated Ventura County that meet the City's policy for water connections outside City limits (Municipal Code Section 22.110.055).

Ventura Water also operates the Saticoy Country Club (SCC) water system, which consists of residences and country club facilities that are located east of the City. They have their own stand-alone system, which includes two groundwater wells, a booster pump station and two storage tanks. The ownership responsibility for the system is shared between the City and SCC (1/3 and 2/3, respectively). The SCC system has a separate Domestic Water Supply Permit from the California Department of Public Health.

On January 16, 2013, the Ventura County Local Agency Formation Commission (LAFCo) adopted resolution LAFCo 13-01S, which updated the City of Ventura Sphere of Influence (see Appendix). The Sphere of Influence (SOI) included in this Report depicts the updated SOI.

VENTURA WATER

City Overview

Legend

- Location Sites
- Ventura City Limit
- General Plan Boundary
- City Sphere of Influence

0 0.5 1
Miles

Source: Eagle Aerial, 2010

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Exhibit 1-1

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D. DOCUMENT COMPARISON

1. 2005 General Plan, General Plan FEIR and 2007 Supplement

State law requires each California city to adopt a comprehensive, long-term General Plan for the physical development of the community that guides local decision-making by expressing community goals about the future distribution and character of land uses and activities. The General Plan serves as a long-term guide, establishing policies for day-to-day land use decisions over a 20-year planning horizon. The General Plan is a policy document that sets over-arching goals for the future development of the City and specifies policies and actions to achieve these over-arching goals.

The 2005 General Plan Final Environmental Impact Report (FEIR) provides an analysis of the potential environmental impacts associated with the potential development identified in the General Plan.

The City prepared a supplement to the FEIR in 2007 to address the impact of an additional 329,000 square feet of non-residential development in the Ventura Harbor area.

<u>Land Use</u>

Chapter 3 of the City's 2005 General Plan defines the City's plan for growth over the 20-year planning horizon (through 2025). Specifically, Table 3-2 of the General Plan provides the estimated amount of development that could reasonably be expected to occur within the City and the Sphere of Influence by 2025, and together with Figure 3-1 provides a picture of where such change might occur. The 2007 FEIR Supplement included an additional potential of 329,000 square feet of non-residential development in the 20-year planning horizon.

<u>Water Supply</u>

Chapter 4.13 of the 2005 General Plan FEIR addresses the impacts of the General Plan on the public utilities, which includes the water system. Table 4.13-7 summarizes the City's historic and projected water supply. The source used in preparation of Table 4.13-7 is the City's 2004 Biennial Water Supply Report, which provides projections for the

City's future water supply and demand based on current information at the time (thru 2003).

Water Consumption (Demands)

Table 4.13-8 summarizes the City's historical and projected water consumption. The source used in preparation of Table 4.13-8 is the City's 2004 Biennial Water Supply Report. Projected demands are based on the post-mandatory water conservation demand factor of 0.179 AFY/capita, the 2000 U.S. Census and the City growth rate of 0.9%. However, the table only projects out to Year 2020. In order to identify the water demand projections for Year 2025, you must utilize the projected water demands developed in Table 4.13-15 (5,806 AFY) in conjunction with the calculated demand increase (115 AFY) identified in the 2007 FEIR Supplement. The demand projections in Table 4.13-15 are based on a set of water demand factors to be discussed later in this Section.

2. 2010 Urban Water Management Plan

An Urban Water Management Plan (UWMP) is a long-term planning tool that provides water purveyors and their customers a broad perspective on water supply issues. The UWMP is a management tool, providing the framework for action, but not functioning as a detailed project development plan. Preparation of the UWMP is a requirement of the California Urban Water Management Planning Act. UWMP's must be prepared every five years. The primary goals of the UWMP are to: 1) plan the water supply over a 20-year period, 2) identify and quantify water supply for future demands in normal, single-dry and multiple-dry year conditions, and 3) implement conservation and efficient water use practices in urban settings.

Land Use

The UWMP does not evaluate land use. The UWMP projects water demands based on population projections. The population projections are based on historical data provided by the California Department of Finance (2000 Benchmark). Future projections are based on the 0.88 percent annual growth rate as identified in the City's 2005 General Plan, and are shown in Table 2-1 of the 2010 UWMP.

Water Supply

Table 3-1 in the 2010 UWMP provides a summary of the existing and projected water supply. The water supply data are based on historical production data and estimates of current water supply sources available and operational constraints.

Water Consumption (Demands)

Table 2-5 in the 2010 UWMP provides a summary of the past, current and projected water demands. The 2005 and 2010 water demand data are the actual metered demands based on billing records. The water demand projections are based on the per capita water demand factor of 168 gallons per capita day, multiplied by the population growth projections identified in Table 2-1 of the UWMP.

3. 2011 Water Master Plan

A Water Master Plan (WMP) is a document that is typically prepared every 5-10 years. They are not mandated by state law, but most water purveyors prepare a WMP to document the plan for improvement or expansion of the existing water distribution system. The master plan provides a comprehensive evaluation of the water system infrastructure to determine the systems' capacity to meet the current and future water demand, and evaluates the operational efficiency of the system. The primary focus of a master plan is to evaluate the capacity of the system facilities (pipelines, pump stations, reservoirs, wells, etc.) to provide a safe and reliable water supply to the customers at minimum specified criteria. The criteria will include system pressure, pipe velocity, fire flow availability, reservoir storage, pump capacity, etc., which are based on guidelines provided by the American Water Works Association (AWWA), Environmental Protection Agency (EPA), and California Department of Public Health (DPH). The primary goal of a WMP is to develop a capital improvement program that identifies specific projects, costs and priorities for system improvements.

Land Use

The 2011 Water Master Plan utilized the land use data provided in Table 3-1 of the 2005 General Plan to establish the existing land use condition. The future "near-term" land use conditions were based on the City's 2006 Pending Project list. The ultimate land use condition was based on the remaining vacant land as identified in the 2005 General Plan,

less the proposed projects listed on the 2006 Pending Project list. The figures are summarized in Tables II-1 thru II-4 in the 2011 Water Master Plan.

Water Supply

The summary of the current (2010) water supplies are identified in Table V-14. The current water supply is shown as a historical supply projection range from 18,760 – 25,800 AFY.

Water Consumption (Demands)

The existing water demands identified in the 2011 Water Master Plan are based on actual billing records taken from a two-year period from January 2004 through December 2005. The actual billing records, coupled with the existing land use identified in the 2005 General Plan were used to develop "actual" water demand factors. The actual demand factors were increased by approximately 10% to account for water loss. The demand factors were applied to the 2006 Pending Project list and then to the remaining vacant land to calculate the future water demands.

The water supply and water demand figures provided within each document are summarized on Table 1-1. The table includes the source of the data used to develop the figures presented within each document, and the various factors and methods used to come up with the projections. As you will note, the water supply projections in the 2005 General Plan documents are the most optimistic and the water demand projections in the 2005 General Plan documents are the most conservative. This is likely due to the fact that these projections were made based on actual data available through Year 2003, and obviously could not factor in the economic conditions of later in the decade, nor the drought and water supply limitations of the same time frame.

It is prudent to point out that comparing the demand and supply projections within each of these three documents is not an "apples to apples" comparison, as each document was prepared at a different time using actual data from different time periods, incorporating current information regarding water supply sources at that specific time, using different methodologies (land use based vs. population based) to calculate future projections, using different demand factors and making different assumptions.

E. DEMAND FACTOR COMPARISON (from previous documents)

Demand factors are used to calculate the future water demand projections. Demand factors are either land use based (per area (acre/ksf) or per dwelling unit) or population based (per capita). Demand factors are typically derived from actual water consumption data, and a safety factor is applied for planning purposes. Demand factors were used in each of the three documents described above to arrive at the future demand projections presented within each report. As briefly described above and shown in Table 1-1, the demand factors and methodologies used within each document vary. Since each document uses different methodologies and demand factors, an “apples to apples” comparison is difficult. Table 1-2 lists the demand factors used within each report. In an attempt to show an “apples to apples” comparison, the residential demand factors have been converted to similar units and are shown on Table 1-3.

The Appendix includes water usage factors from other local agencies with similar characteristics – population, climate and water supply sources. These include Simi Valley, Thousand Oaks, Irvine Ranch Water District and Santa Margarita Water District.

Table 1-1
Summary of Previous Documents

Total Water Supply (AFY)							
Document	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**Data Source & Factors**
2005 General Plan, GP FEIR and 2007 Supplement	*21,566* [1]	26,300	28,262	28,262	28,262	28,262	Table 1 of the 2004 Biennial Water Supply Report - Based on actual water production data thru 2003 - Future projections based on assumptions and limitations for each supply source known at the time (2004) - [1] Figure includes 1,129 AFY for raw water and oil operation use - Figures do not include recycled water
2010 Urban Water Management Plan	n/a	n/a	20,600	22,000	24,600	24,700	Table 3-2 of the 2010 UWMP - Water production data for 2010 is based on annual average data from 2000 - 2009 as presented in Table V-14 of the 2011 WMP - Future projections based on assumptions and limitations for each supply source known at the time (2011) - Figures do not include raw water and oil operation use - Figures include 700 AFY of recycled water annually
2011 Water Master Plan	n/a	n/a	n/a	n/a	n/a	18,760 - 25,800	Tables ES-2, V-1, V-2, V-7, V-10, V-13 and V-14 of 2011 WMP - Based on actual water production data thru 2009 - Future projections based on assumptions and limitations for each supply source known at the time (2011) - Figures do not include raw water and oil operation use - Figures do not include recycled water

Total Water Demand / Consumption (AFY)							
Document	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**Data Source & Factors**
2005 General Plan, GP FEIR and 2007 Supplement	*20,437*	20,594	21,724	22,918	24,181	27,421 [2]	Tables 2, 3 and 4 of the 2004 Biennial Water Supply Report - Based on actual water consumption data thru 2003 - Historical population based on 2000 U.S. Census - Growth rate in City = 0.9%, outside City = 0.6% - Water Use Factor = 0.179 AFY/capita - [2] Year 2025 projections based on demand factors provided for FEIR
2010 Urban Water Management Plan	n/a	*20,808*	*17,351*	22,286	23,256	24,270	Table 2-5 of the 2010 UWMP - Based on actual water consumtion data through 2010 - Historical population based on California Department of Finance Table E-4 Population Estimates for Cities, Counties and the State (2000 Benchmark) - Growth rate in City = 0.88%, outside City = 0.1258% in connections - Water Use Factor = 168 gpcd = 0.188 AFY/capita
2011 Water Master Plan	n/a	*16,190*	17,896	n/a	n/a	22,708	Table IV-5 and Figure IV-2 of the 2011 WMP - Based on actual billing records from 2004-2005. - Near-term projections (allocated to 2010) based on actual billing data from 2004-2005, calculated demand factors from the same period applied to the 2006 Pending Projects list. - Long-term projections (allocated to Year 2025) based on applying the calculated demand factors to the remaining developable land as identified in the 2005 GP, excluding the land accounted for in the 2006 Pending Projects list.

Table 1-2
Summary of Water Demand Factors in Previous Documents

General Plan FEIR, August 2005

Land Use Description	Density (DU/Acre)	Demand Factor [1]	Unit
Residential	n/a	450	gpd/du
Retail	-	250	gpd/ksf
Office	-	250	gpd/ksf
Industrial	-	315	gpd/ksf
Hotel	-	500	gpd/ksf

[1] Provided in email corrspondence from Chandra Chandrashaker, City CD, (January 8, 2013). Only used to calculate the year 2025 projections.

Note: Future projections through year 2020 based on population data and 0.179 AFY/capita factor

2010 Urban Water Management Plan

Land Use Description	Density (DU/Acre)	Demand Factor [1]	Unit
Single-Family	n/a	0.33	AFY/Acct
Multi-Family	n/a	1.71	AFY/Acct
Commercial	-	1.69	AFY/Acct
Industrial	-	10.87	AFY/Acct
Institutional/Governmental	-	2.80	AFY/Acct
Landscape	-	4.86	AFY/Acct
Petroleum Recovery	-	465	AFY/Acct
Other	-	0.83	AFY/Acct

[1] Adapted from 2005 data in Tables 2-5 and 2-6 of the 2010 UWMP.

Note: Future projections based on population data and 168 gpcd factor = 0.188 AFY/capita

Water Master Plan, March 2011

Land Use Description [1]	Density (DU/Acre) [1]	Demand Factor [2]	Unit
Neighborhood Low (NL)	0-8	1.20	gpm/acre
Neighborhood Medium (NM)	9-20	2.00	gpm/acre
Neighborhood High (NH)	21-54	5.00	gpm/acre
Commerce (C)	-	1.60	gpm/acre
Industry (I)	-	1.60	gpm/acre
Public and Institutional (PI)	-	0.75	gpm/acre
Parks and Open Space (POS)	-	0.10	gpm/acre
Downtown Specific Plan	21-54	2.55	gpm/acre

[1] Source: 2005 General Plan

[2] Per Table III-1 of WMP. Factors are calculted based on 2004-2005 billing data, and 2005 General Plan land use data.

Table 1-3
Comparison of Residential Water Demand Factors in Previous Documents

Comparison of Residential Demand Factors					
2005 General Plan FEIR		**2010 UWMP [2]**		**2011 Water Master Plan [1]**	
Residential	450 gpd/du	Single-Family	293 gpd/du	Low (NL)	432 gpd/du
				Medium (NM)	199 gpd/du
		Multi-Family	1530 gpd/du	High (NH)	192 gpd/du

[1] Assumes the average density (du/acre)

[2] Assumes 1 account = 1 du

F. CURRENT PLANNING DATA

The Community Development Department (City Planning Department) maintains a database of all projects that are in the planning, design or construction phase. These projects are known as the "Pending Projects." The pending projects database is updated constantly as new projects are proposed or existing projects are modified.

The Community Development Department provided actual development data ("Built" projects) for the period from 2005 – 2012, and data on all projects that are under construction or have received all planning approvals ("Approved" projects) for development, as of December 31, 2012. This Report will take into account the actual development data provided by the City for years 2005-2012 to determine the current land use condition (as of December 31, 2012), as well as consider the impacts of those projects that are under construction or have received all planning approvals. Projects listed in the Pending Project database that had not received all approvals from the City as of December 31, 2012 were not considered in the future water demand projections for this Report.

G. 2012 LAFCo MUNICIPAL SERVICE REVIEW

It should be noted that in 2012, the Ventura Local Agency Formation Commission (LAFCo) completed the Municipal Service Review for nine Ventura County cities, including the City of San Buenaventura. LAFCos exist for each county in California. LAFCos are responsible for achieving three primary objectives: encouraging the orderly formation and expansion of local government agencies; preserving agricultural land and open space resources; and discouraging urban sprawl. To accomplish these objectives, LAFCos are responsible for coordinating logical and timely changes in local government boundaries, conducting special studies that review ways to reorganize and streamline government structure and preparing a sphere of influence for each city and special district over which they have authority.

LAFCos are required to review, and as necessary, update the sphere of influence for each city or special district every five years. Prior to updating a sphere of influence, LAFCo is required to conduct a Municipal Service Review (MSR). MSRs consist of written determinations relating to seven different factors, one of which is the "present and planned capacity of public facilities, adequacy of public services, and infrastructure needs or deficiencies related to … municipal and industrial water… within or contiguous to the sphere of influence."

The MSR for the City of San Buenaventura (City) was accepted by the LAFCo Board on November 14, 2012. LAFCos findings regarding the potable water system concluded the City's current potable water demand is 88 percent of the supply, with approved development projects it increases to 94 percent of the supply, with proposed development projects it increases to 96 percent of the supply, and in drought conditions the normal water demand exceeds supply.

A copy of the MSR for the City is included as an Appendix.

H. REFERENCE DOCUMENTS

The following documents were used as reference for the preparation of this Comprehensive Water Resources Report. Specific excerpts and data sources from these documents used in the preparation of this Report are included in the Appendix.

2004 Biennial Water Supply Report

2005 Ventura General Plan (August 2005), City of San Buenaventura.

2005 Ventura General Plan Final EIR, Volumes I and II (August 2005), City of San Buenaventura.

2007 General Plan FEIR Supplement

2010 Urban Water Management Plan (June 2011), Kennedy/Jenks Consultants.

Water Master Plan (March 2011), RBF Consulting.

Municipal Service Reviews for Nine Ventura County Cities (November 14, 2012), Ventura Local Agency Formation Commission (LAFCo).

2. LAND USE

A. EXISTING LAND USE

For the purposes of this Report, the "existing" land use picture is considered the year-end of 2012. In order to determine the existing land use make-up within the City's water service area as of year-end 2012, the land use data published in the 2005 General Plan was used as a starting point. Table 3-1 of the 2005 General Plan (see Appendix) identifies the existing land uses (as of year-end 2004) in dwelling-unit count and square-footage. Table 2-1 herein provides a summary of the existing development as of year-end 2004 within the General Plan land use categories. Exhibit 2-1 (a copy of Figure 3-5 from the General Plan) depicts the land use designations throughout the City as identified in the 2005 General Plan.

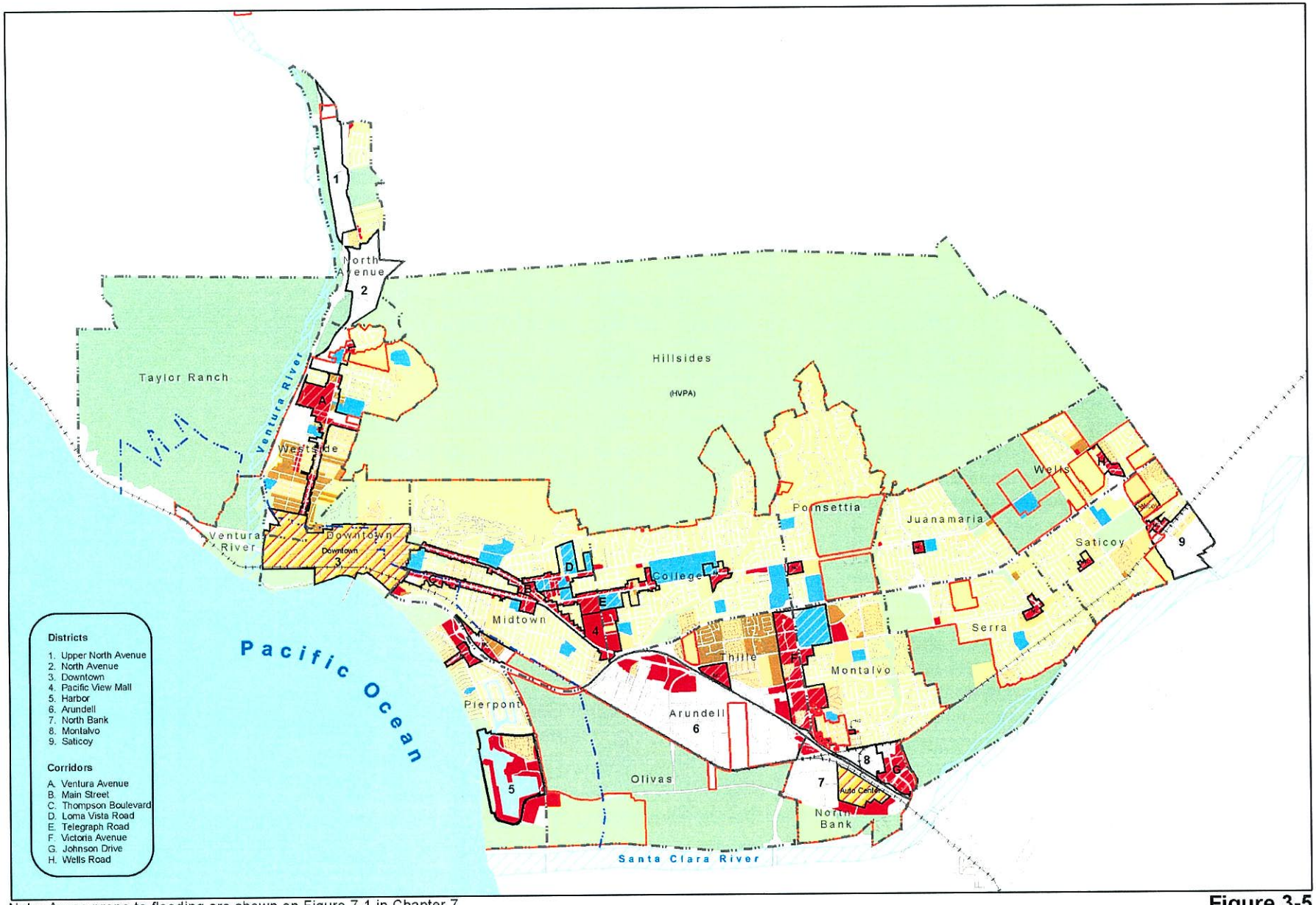
In order to depict the land use condition of the present day "existing" condition, data for all projects built from 2005-2012 was tabulated and summarized. The City Planning Department provided a listing of all projects "built" from 2005-2012, including back-up data (see Appendix). Minor modifications and adjustments were made based on supplemental data provided by Ventura Water staff. In addition, square footages for parking garages were eliminated from the list since the land use does not consume water. The summary of the "Built" projects is included in Table 2-2. It should be noted that the land uses were broken down into two (2) non-residential categories and two (2) residential categories, which is a more consolidated breakdown of the land use designations than shown in the 2005 General Plan.

Table 2-3 provided a summarized total of the existing (year-end 2012) land use within the City service area. It should be noted that Table 2-3 has been further consolidated into one (1) non-residential category. This was done because the break-down of the non-residential land uses in Table 2-2 was not broken down into detailed categories that matched the 2005 General Plan.

Table 2-1
Existing Land Uses per 2005 General Plan [1]

Planning Designation	Allowed Density (du/acre)	Existing Development as of 2004		
		Single Family (Units)	Multi Family (Units)	Non-Residential (SF)
Neighborhood Low	0-8	19,425	3,335	49,386
Neighborhood Medium	9-20	1,163	8,965	149,513
Neighborhood High	21-54	814	2,468	194,143
Commerce		257	490	4,995,248
Industry		29	31	8,299,840
Public and Institutional		4	0	54,422
Park and Open Space		6	0	15,491
Agriculture		4	0	19,550
Downtown Specific Plan	21-54	332	1,543	1,795,401
Harbor District		0	310	350,160
Total		**22,034**	**17,142**	**15,923,154**

[1] Source: Table 3-1 of 2005 Ventura General Plan



Note: Areas prone to flooding are shown on Figure 7-1 in Chapter 7.

Figure 3-5

GENERAL PLAN DIAGRAM

Neighborhood
- Low (up to 8 du/ac)
- Medium (9-20 du/ac)
- High (21-54 du/ac)

- Commerce
- Industry
- Public and Institutional
- Agriculture
- Parks and Open Space
- Specific Plan Area
- Corridors, Neighborhood Centers (NC)
- Districts
- City Limits
- Planning Communities
- California Coastal Zone Boundary

This map is a product of the City of San Buenaventura, California. Although reasonable efforts have been made to ensure the accuracy of this map, the City of San Buenaventura cannot guarantee its accuracy.

Table 2-2
Summary of "Built" Projects 2005-2012

	Non-Residential			Residential		
	RETAIL/OFFICE (SF)	INDUSTRIAL (SF)	TOTAL NON-RESIDENTIAL (SF)	SINGLE-FAMILY (UNITS)	MULTI-FAMILY (UNITS)	TOTAL RESIDENTIAL (UNITS)
DISTRICTS						
Upper North Avenue	0	18,619	18,619			
North Avenue	0	0	0			
Downtown Specific Plan	55,891	0	55,891	14	184	198
Pacific View Mall	14,624	0	14,624			
Harbor	201	0	201			
Arundell	105,412	71,890	177,302			
North Bank	97,774	500,132	597,906			
Montalvo	0	270	270			
Saticoy	438	0	438			
Subtotal (Districts)	***274,340***	***590,911***	***865,251***	***14***	***184***	***198***
CORRIDORS						
Ventura Avenue	7,086	0	7,086		24	24
Main Street	2,072	0	2,072		10	10
Thompson Boulevard	18,784	0	18,784			
Loma Vista	19,541	0	19,541		4	4
Telegraph Road	5,503	0	5,503		4	4
Victoria Avenue	64,775	163,328	228,103			
Johnson Drive	840	0	840			
Wells Road	2,816	0	2,816			
Subtotal (Corridors)	***121,417***	***163,328***	***284,745***	***0***	***42***	***42***
SPHERE OF INFLUENCE(SOI/Other Infill/Neighborhood Centers)						
101/126 Agriculture	0	0	0			
Wells/Saticoy	0	0	0			
Pierpont	0	0	0			
Other Neighborhood Centers (includes Seaward/Allessandro+College/ Day+Gateway Plaza+Victoria Plaza+Bristol+Kimball/Telegraph+Petit/Telephone+Telephone/ Cachuma+Saticoy)	27,032	0	27,032			
Second Units	0	0	0		26	26
Underutilized	0	0	0			
Vacant	0	0	0			
Subtotal (SOI/Other Infill/NC)	***27,032***	***0***	***27,032***	***0***	***26***	***26***
PLANNING COMMUNITIES (Not Included within District/Corridor/Center-above)						
Downtown	0	0	0	3	2	5
Ventura Ave/Westside	0	0	0			
Midtown	0	0	0	49	11	60
College (Telegraph/Loma Vista)	10,931	0	10,931	10	2	12
Telephone Road Corridor	0	0	0			
Montalvo/Victoria	56,933	0	56,933	123	104	227
Saticoy/East End	6,320	0	6,320	95	453	548
Arundell	0	0	0			
Olivas	658	0	658			
Pierpont	26,436	0	26,436	27	4	31
Serra	3,744	0	3,744	191	95	286
Juanamaria	689	0	689	1	3	4
Poinsettia	1,499	0	1,499	8		8
Thille	13,370	0	13,370		364	364
Wells	87,618	0	87,618		60	60
Westside	9,216	0	9,216	22	19	41
Subtotal (Planning Communities)	***217,414***	***0***	***217,414***	***529***	***1,117***	***1,646***
TOTAL	640,203	754,239	**1,394,442**	543	1,369	**1,912**

Source: Development data provided by City 02/14/2013.
Note: Figures include the built projects only.

Table 2-3
Summary of Existing Land Use - December 2012

	Residential Single-Family (units)	Residential Multi-Family (units)	Non-Residential (sf)
Existing (as of 2005 General Plan) [1]	22,034	17,142	15,923,154
Constructed (Built Projects 2005 - 2012) [2]	543	1,369	1,394,442
Total Existing Land Use (through 2012)	**22,577**	**18,511**	**17,317,596**

[1] Per Table 2-1
[2] Per Table 2-2

B. FUTURE LAND USE

The City maintains a database of projects that are in a phase of the planning process. The database includes all projects from those that are in the conceptual phase to those that are in construction. For the purposes of this Report, the priority was to determine those projects that the City has made commitments to, and to determine the water resources required to meet the anticipated water demand of the projects.

1. Under Construction and Approved Projects

The City Planning Department provided a listing of all the development projects within the City that are "In Planning Process," "In Plan Check," "Under Construction," or have "All Planning Approvals." The list was narrowed down to those projects that are either "Under Construction," or have "All Planning Approvals." Some modifications and adjustments were made based on review and data provided by Ventura Water staff. The Under Construction and Approved Projects are shown on Table 2-4. Table 2-4 provides specific data about each project, including the project number, type, name, status, description and land use details. The table also identifies if the project is located within the boundary of the Casitas Municipal Water District. Exhibit 2-2 identifies the location of each Project that is "Under Construction" or has "All Planning Approvals."

2. Future Potential (per 2005 General Plan)

Table 3-2 of the 2005 General Plan (see Appendix) identifies the predicted development intensity and pattern that was anticipated to occur within the General Plan boundary through the planning horizon of year 2025. As mentioned previously, the City provided information as to the development areas that have been constructed, are currently under construction, or are approved for development since the 2005 General Plan through the end of year 2012. Table 2-5 provides a summary of the 2005 General Plan predicted development, a summary of the projects constructed from 2005-2012, a summary of the projects that are under construction or approved, and calculates the remaining developable land through the 2025 planning horizon. It should be noted that the residential unit count is not divided up by the density.

Table 2-4
Summary of Approved and Under Construction Projects - December 2012

						Non-Residential								Residential			
Project ID	**Project Type**	**Project Name**	**Project Status**	**Located in Casitas Municipal Water District (Y or N)**	**Description of Project**	**Commercial (SF)**	**Hotel (SF)**	**Industrial (SF)**	**Institutional (SF)**	**Office (SF)**	**Total (SF)**	**Hospital (beds)**	**Hotel (Rooms)**	**Single-Family (Units)**	**Multi-Family (Units)**	**Total (Units)**	**Area (ac)**
PROJ-00687	Mixed Use	CAFE SCOOP - STAJEN	All Planning Approvals	YES	Mixed Use - Condominiums/Commercial	4,873	0	0	0	0	4,873	0	0		10	10	0.5
PROJ-00756	Mixed Use	ANASTASI DEV.	All Planning Approvals	NO	Mixed Use - Commercial/Residential	20,230	0	0	0	0	20,230	0	0		138	138	5.6
PROJ-01009	Industrial	SALLY CRAIN	All Planning Approvals	NO	Warehouse building	0	0	40,000	0	0	40,000	0	0			0	2.5
PROJ-01181	Institutional	HARRY LYONS SCHOOL	All Planning Approvals	YES	Public pool & aquatic center	0	0	0	5,960	0	5,960	0	0			0	1.3
PROJ-01520	Mixed Use	V2V VENTURES	All Planning Approvals	YES	Mixed Use - Condominiums/Commercial	2,500	0	0	0	0	2,500	0	0		29	29	1.1
PROJ-02225	Mixed Use	CENTRAL COAST INVESTORS	All Planning Approvals	YES	Mixed Use - Condominiums/Commercial	4,500	0	0	0	0	4,500	0	0		43	43	1.1
PROJ-02284	Residential	HILTY APARTMENTS	All Planning Approvals	YES	Apartments	0	0	0	0	0	0	0	0		16	16	0.4
PROJ-03031	Residential	ALDEA HERMOSA - CITY VENTURES	Under Construction	NO	47 single family residences with 9 residential 2nd units	0	0	0	0	0	0	0	0	28		28	7.4
PROJ-03198	Residential	REXFORD	All Planning Approvals	YES	Condominiums	0	0	0	0	0	0	0	0		25	25	0.5
PROJ-03232	Residential	CITRUS PLACE - PHASE 2 & 3	All Planning Approvals	NO	59 Single Family Residences; 60 Condominiums	0	0	0	0	0	0	0	0	59	60	119	9.4
PROJ-03614	Mixed Use	V2V VENTURES	All Planning Approvals	YES	Mixed Use - Condominiums/Commercial	6,175	0	0	0	0	6,175	0	0		34	34	0.3
PROJ-03617	Industrial	FPA LAND DEV/VICTORIA CORP C	All Planning Approvals	NO	8 industrial office buildings	0	0	234,200	0	0	234,200	0	0			0	11.9
PROJ-03676	Mixed Use	PALM & POLI ASSOC	All Planning Approvals	YES	Mixed Use - Condominiums/Commercial	1,200	0	0	0	0	1,200	0	0		16	16	0.4
PROJ-03743	Mixed Use	CANNERY ROW LLC	Under Construction	YES	Mixed Use - Condominiums/Commercial	2,156	0	0	0	0	2,156	0	0		78	78	1.4
PROJ-03826	Residential	UC HANSEN TRUST SP	All Planning Approvals	NO	131 Single family; 34 Condominiums; 24 farmworker apartments	0	0	0	0	0	0	0	0	131	58	189	35.7
PROJ-03829	Residential	WESTWOOD/PARKLANDS	All Planning Approvals	NO	216 detached homes; 110 attached homes	0	0	0	0	0	0	0	0	216	110	326	58.5
PROJ-03864	Commercial	VOOV	All Planning Approvals	NO	New 2-story office building.	0	0	0	0	6,400	6,400	0	0			0	0.6
PROJ-03865	Residential	MATILIJA	All Planning Approvals	YES	Condominiums	0	0	0	0	0	0	0	0		28	28	0.9
PROJ-04110	Residential	RISI	All Planning Approvals	YES	Condominiums	0	0	0	0	0	0	0	0		6	6	0.2
PROJ-04154	Residential	CENTEX	All Planning Approvals	YES	120 Single Family Residence, 36 Condominiums	0	0	0	0	0	0	0	0	120	36	156	25.3
PROJ-04182	Mixed Use	NEW URBAN VENTURES	All Planning Approvals	YES	Mixed Use - Condominiums/Commercial	1,779	0	0	0	0	1,779	0	0		80	80	2.7
PROJ-04263	Residential	SANTA CLARA ST URBAN RENEWAL	All Planning Approvals	YES	Condominiums	0	0	0	0	0	0	0	0		21	21	0.4
PROJ-04282	Commercial	GHITTERMAN	Under Construction	NO	New 2 story office building.	0	0	0	0	4,829	4,829	0	0			0	0.2
PROJ-04284	Mixed Use	MAIN/CENTRAL	All Planning Approvals	YES	Mixed Use - Condominiums/Commercial	2,500	0	0	0	0	2,500	0	0		14	14	0.6
PROJ-04291	Residential	LA BARRANCA	All Planning Approvals	NO	10 Single Family Lots	0	0	0	0	0	0	0	0	10		10	3.8
PROJ-04296	Residential	GOLDBERG	All Planning Approvals	YES	5 Condominiums	0	0	0	0	0	0	0	0		5	5	0.2
PROJ-04300	Commercial	VENTURA EAST VILLAGE	All Planning Approvals	NO	14,000 sq.ft. market; 15,500 sq.ft. drugstore; 2,911 sq.ft. drive-thru restraunt	32,411	0	0	0	0	32,411	0	0			0	5.0
PROJ-04315	Residential	MATLIJA INVESTMENT GROUP	All Planning Approvals	YES	15 Condonimiums	0	0	0	0	0	0	0	0		15	15	0.6
PROJ-04326	Mixed Use	SONDERMANN-RING/VTA HARBOR	All Planning Approvals	NO	313 apartments (incl. 30 live/work lofts); 21,300 sq ft commercial/retail; 104 public boating slips; 8,600 sq ft recreation/management building; 1,850 linear foot public promenade.	21,300	0	0	0	8,600	29,900	0	0		313	313	26.9
PROJ-04333	Industrial	GORBANOV	All Planning Approvals	NO	New two story industrial building	0	0	3,241	0	0	3,241	0	0			0	0.4
PROJ-04543	Mixed Use	RENAISSANCE HOLDINGS	All Planning Approvals	YES	Mixed Use - Condominiums/Commercial	3,582	0	0	0	0	3,582	0	0		25	25	0.8
PROJ-04590	Residential	HUGHES	All Planning Approvals	YES	3 Condominiums	0	0	0	0	0	0	0	0		3	3	0.2
PROJ-04623	Mixed Use	JENVEN VILLAGE LLC	All Planning Approvals	NO	Mixed Use - Condomiums/Commercial	23,691	0	0	0	0	23,691	0	0		83	83	3.1
PROJ-04691	Residential	CHAPMAN, MIKE	Under Construction	YES	7 Apartments	0	0	0	0	0	0	0	0		7	7	0.5
PROJ-1126	Residential	HEMLOCK APARTMENTS	All Planning Approvals	YES	23 Apartments	0	0	0	0	0	0	0	0		23	23	0.6
PROJ-1128	Commercial	CHICK-FIL-A	Under Construction	NO	Fast food restaurant with a drive-thru	4,356	0	0	0	0	4,356	0	0			0	1.0
PROJ-1200	Mixed Use	LOGUE FAMILY	All Planning Approvals	YES	Mixed Use - Condominiums/Commercial	7,300	0	0	0	0	7,300	0	0		105	105	5.9
PROJ-1678	Institutional	CMH - NEW HOSPITAL	Under Construction	YES	Construction of a hospital building (320,000 sq ft and 230 beds), adaptive resuse of existing hospital facilities (121,000 sq ft for non-essential hospital support services) and 104,000 sq ft for new backfill medical office reuse), new street extensions.	0	0	0	320,000	0	320,000	230	0			0	1.9
PROJ-2008	Residential	ISLAND VIEW APARTMENTS - WESTWOOD COMMUNITIES	All Planning Approvals	NO	Apartment complex	0	0	0	0	0	0	0	0		154	154	3.8
PROJ-2695	Commercial	CBCFCU	Under Construction	NO	Two story bank	0	0	0	0	7,434	7,434	0	0			0	0.6
PROJ-3678	Institutional	CITY HALL - CARPORTS	All Planning Approvals	YES	Installation of solar panels on top of new parking canopy structures on behind City Hall	0	0	0	0	0	0	0	0			0	2.8
PROJ-3784	Commercial	MARRIOT RESIDENCE INN	All Planning Approvals	NO	128 room Residence Inn	0	87,000	0	0	0	87,000	0	128			0	3.7
PROJ-3996	Commercial	MJL CAPITAL PARTNERS - GP/Z AMENDMENT	All Planning Approvals	NO	General Plan Amendment to modify the existing General Plan Land Use designation from Neighborhood Low to Commerce and change the existing zone designation from Single Family Residential (R-1) to Limited Commercial (C-1).	0	0	0	0	0	0	0	0			0	0.5
PROJ-4154	Residential	EAST VILLAGE RESIDENTIAL - CEDC	All Planning Approvals	NO	Low Income Apartments	0	0	0	0	0	0	0	0		50	50	2.5
PROJ-4222	Residential	PARKLANDS APARTMENTS	All Planning Approvals	NO	Apartments with Community Building	0	0	0	7,115	0	7,115	0	0		173	173	7.1
PROJ-4627	Commercial	VALERO	All Planning Approvals	YES	New automatic carwash and canopy	912	0	0	0	0	912	0	0			0	0.6
PROJ-4677	Residential	WESTSIDE RENAISSANCE - DYER SHEEHAN	All Planning Approvals	YES	Affordable senior apartments	0	0	0	0	0	0	0	0		50	50	2
TOTAL						**139,465**	**87,000**	**277,441**	**333,075**	**27,263**	**864,244**	**230**	**128**	**564**	**1,808**	**2,372**	**243.3**

Source: City of Ventura, with updates based on 04/12/2013 discussions.

Table 2-5
Summary of Predicted, Actual and Remaining Development

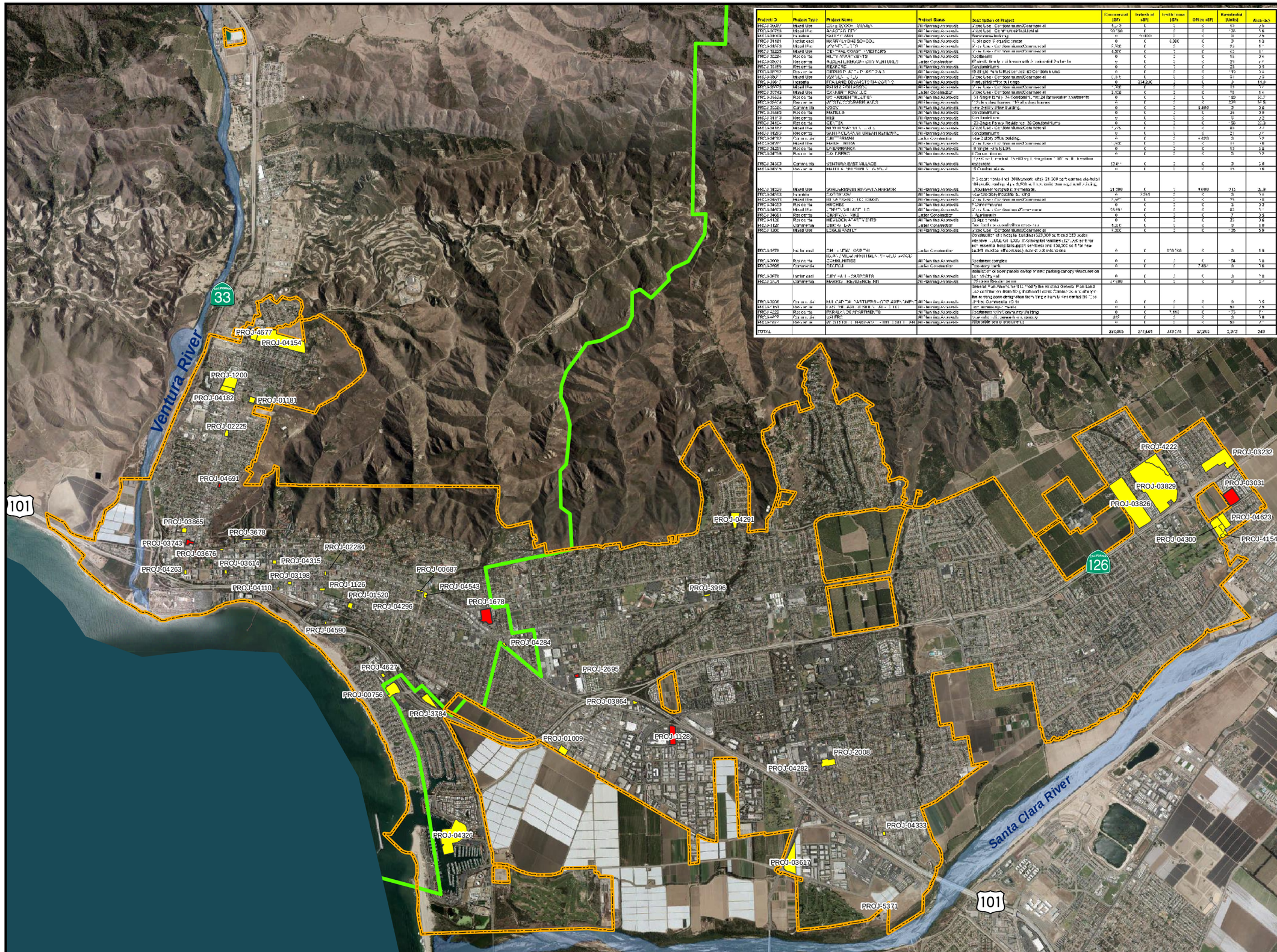
	Residential Development (units)	Non-Residential				
		Retail (sf)	Office (sf)	Industrial (sf)	Hotel (sf)	Total (sf)
2005 General Plan Prediction [1]	8,318	1,241,377	1,213,214	2,235,133	530,000	5,219,724
Actual Development (Built 2005-2012) [2]	1,912	320,102	320,102	754,239	0	1,394,442
Remaining Developable Land (as of end 2012)	***6,406***	***921,276***	***893,113***	***1,480,894***	***530,000***	***3,825,282***
Approved & Under Construction Projects [3]	2,372	139,465	27,263	610,516	87,000	864,244
Remaining Developable Land (through 2025)	**4,034**	**781,811**	**865,850**	**870,378**	**443,000**	**2,961,038**

[1] Source: Table 3-2 of 2005 General Plan.

[2] Per Table 2-2. The "Retail/Office" square footage listed in Table 2-2 was split evenly for the purposes of this table.

[3] Per Table 2-4. Square footage for the "Institutional" Category was added to the "Industrial" category.

Project ID	Project Type	Project Name	Project Status	Description of Project	Commercial (SF)	Industrial (SF)	Health Care (SF)	Office (SF)	Residential (Units)	Acres
PROJ-3687	Mixed Use	[illegible]	All Planning Approvals	Zoning Use: Commercial/Commercial	[illegible]	0	0	0	13	25
PROJ-3783	Mixed Use	[illegible]	All Planning Approvals	Zoning Use: Commercial/Residential	10,750	0	0	0	36	1.6
PROJ-3804	Industrial	[illegible]	All Planning Approvals	Warehouse/Industrial	0	50,000	0	0	0	2.8
PROJ-3181	Institutional	MARY LYONS SCHOOL	All Planning Approvals	Add Solar Photovoltaic Array	0	0	0,000	0	0	13
PROJ-3853	Mixed Use	[illegible]	All Planning Approvals	Zoning Use: Commercial/Commercial	2,500	0	0	0	39	1.1
PROJ-3225	Mixed Use	[illegible]	All Planning Approvals	Zoning Use: Commercial/Commercial	4,500	0	0	0	25	1.1
PROJ-3326	Residential	[illegible]	All Planning Approvals	Condominiums	0	0	0	0	15	2.4
PROJ-3001	Residential	[illegible]	Under Construction	47 units, family, individual homes with 5 [illegible]	0	0	0	0	25	7.7
PROJ-3189	Residential	[illegible]	All Planning Approvals	Condominiums	0	0	0	0	25	3.4
PROJ-3755	Residential	[illegible]	All Planning Approvals	[illegible]	0	0	0	0	15	3.4
PROJ-3087	Mixed Use	[illegible]	All Planning Approvals	Zoning Use: Commercial/Commercial	0,13	0	0	0	91	2.9
PROJ-3487	Industrial	[illegible]	All Planning Approvals	Industrial/Office Buildings	0	214,000	0	0	0	11.9
PROJ-3973	Mixed Use	[illegible]	All Planning Approvals	Zoning Use: Commercial/Commercial	2,500	0	0	0	12	1.1
PROJ-3743	Mixed Use	[illegible]	Under Construction	Zoning Use: Commercial/Commercial	2,100	0	0	0	75	3.4
PROJ-3424	Residential	[illegible]	All Planning Approvals	24 Single Family Condominiums and 24 Townhome Condominiums	0	0	0	0	48	5.7
PROJ-3904	Residential	[illegible]	All Planning Approvals	[illegible]	0	0	0	0	320	6.8
PROJ-3264	Commercial	[illegible]	All Planning Approvals	New Retail/Office Building	0	0	0	1,000	0	3.0
PROJ-3485	Residential	[illegible]	All Planning Approvals	Condominiums	0	0	0	0	25	3.9
PROJ-3173	Residential	[illegible]	All Planning Approvals	Condominiums	0	0	0	0	9	2.2
PROJ-3435	Residential	[illegible]	All Planning Approvals	22 Single Family Residence 38 Condominiums	0	0	0	0	60	5.9
PROJ-3187	Mixed Use	[illegible]	All Planning Approvals	Zoning Use: Commercial/Commercial	[illegible]	0	0	0	30	7.7
PROJ-3583	Residential	[illegible]	All Planning Approvals	Condominiums	0	0	0	0	21	2.7
PROJ-3459	Commercial	[illegible]	Under Construction	New 2-story office building	0	0	0	4,000	0	1.2
PROJ-3697	Mixed Use	[illegible]	All Planning Approvals	Zoning Use: Commercial/Commercial	[illegible]	0	0	0	11	1.8
PROJ-3621	Residential	[illegible]	All Planning Approvals	8 Single Family Lots	0	0	0	0	13	3.8
PROJ-3709	Residential	[illegible]	All Planning Approvals	8 Condominiums	0	0	0	0	5	1.2
PROJ-3030	Commercial	VENTURA BUSINESS VILLAGE	All Planning Approvals	[illegible]	12,[illegible]	0	0	0	0	1.0
PROJ-3609	Residential	[illegible]	All Planning Approvals	15 Condominiums	0	0	0	0	15	1.8
PROJ-3039	Residential	[illegible]	All Planning Approvals	15 condominiums (Net Multifamily: 21,300 sq. feet residential) 21,300 sq. feet residential retail (Multifamily: 21,300 sq. feet residential retail) 8,500 sq. feet [illegible]	21,300	0	0	8,500	215	2.9
PROJ-3633	Residential	[illegible]	All Planning Approvals	New 100 Unit/Facility [illegible]	0	13,[illegible]	0	0	0	[illegible]
PROJ-3047	Mixed Use	[illegible]	All Planning Approvals	Zoning Use: Commercial/Commercial	[illegible]	0	0	0	19	1.8
PROJ-3623	Residential	[illegible]	All Planning Approvals	Condominiums	0	0	0	0	3	2.2
PROJ-3663	Mixed Use	[illegible]	All Planning Approvals	Zoning Use: Commercial/Commercial	[illegible]	0	0	0	85	[illegible]
PROJ-3061	Residential	[illegible]	Under Construction	Apartments	0	0	0	0	7	2.3
PROJ-3158	Residential	[illegible]	All Planning Approvals	23 apartments	0	0	0	0	23	3.8
PROJ-3180	Commercial	[illegible]	Under Construction	[illegible]	1,[illegible]	0	0	0	0	1.0
PROJ-3300	Mixed Use	[illegible]	All Planning Approvals	Zoning Use: Commercial/Commercial	2,300	0	0	0	120	5.9
PROJ-3472	Institutional	[illegible]	Under Construction	Construction of hospital building (323,300 sq. feet and 333 hospital beds) [illegible]	0	0	270,720	0	0	1.0
PROJ-3008	Residential	[illegible]	All Planning Approvals	Condominium complex	0	0	0	0	156	3.8
PROJ-3068	Commercial	[illegible]	Under Construction	Cemetery park	0	0	0	2,457	0	3.8
PROJ-3679	Institutional	[illegible]	All Planning Approvals	Installation of solar panels on top of new parking canopy structures on [illegible]	0	0	0	0	0	7.8
PROJ-3041	Commercial	[illegible]	All Planning Approvals	[illegible]	17,000	0	0	0	0	3.7
PROJ-3006	Commercial	[illegible]	All Planning Approvals	General Plan/Change of Zone [illegible]	0	0	0	0	0	3.6
PROJ-3161	Residential	[illegible]	All Planning Approvals	[illegible]	0	0	0	0	30	2.8
PROJ-3239	Residential	[illegible]	All Planning Approvals	Condominium Conversion/Building	0	0	7,112	0	173	2.7
PROJ-3479	Commercial	[illegible]	All Planning Approvals	[illegible]	317	0	0	0	0	3.8
PROJ-3677	Residential	[illegible]	All Planning Approvals	[illegible]	0	0	0	0	30	2.7
TOTAL					205,905	277,447	333,015	27,202	2,372	243



VENTURA WATER

Pending Projects Approved and Under Construction
(as of December 2012)

Legend

Ventura City Limit

Project Status

All Planning Approvals

Under Construction

0 0.5 1
Miles

Source: Eagle Aerial, 2010

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Exhibit 2-2

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3. WATER DEMANDS

A. EXISTING DEMAND CONDITION

According to the 2010 UWMP, the City serves almost 32,000 service connections and approximately 113,500 persons. Per-capita water usage has shown a marked decline in recent decades from 277 gallons per capita per day (gpcd) to 161 gpcd. This decrease is a result of lower water use by a few large use customers and concerted water conservation efforts pursuant to the State of California's mandated landscape ordinance and Senate Bill 7 also known as the Water Conservation Act of 2009. However, the City's water consumption target, which must be achieved by 2020, must further reduce the per-capita consumption by another 12 percent to achieve the target of 142 gpcd.

City staff provided a summary of the meter consumption data for the entire service area for the calendar years (CY) 2003 - 2012 (Historical Water Consumption). Table 3-1 summarizes the total water consumption for each consumption category within the City's water service area for the most recent complete year of data, CY 2012. As shown in Table 3-1, the total water consumption for CY 2012 was 18,004 AFY, including the 6.5% water loss factor. The annual water consumption figures for the past ten years are provided in subsection 3.D.

Table 3-1

Summary of Existing Water Consumption for CY 2012

City Consumption Category	Water Consumption (HCF) [1]	Water Consumption (gpm)	Water Consumption (gpd)	Water Consumption (AFY)	Water Consumption + 6.5% Loss (AFY)
Single Family	3,212,783	4,572.23	6,584,005	7,376	7,855
Multi Family	1,708,860	2,431.94	3,501,993	3,923	4,178
Commercial/Retail/Industrial/Hotel	1,491,845	2,123.10	3,057,260	3,425	3,647
Public/Institutional (Municipal/Church/School)	250,903	357.07	514,179	576	613
Hospitals	96,261	136.99	197,269	221	235
Parks/Landscape/Irrigation	398,875	567.65	817,421	916	975
Other [2]	204,439	290.94	418,960	469	500
Total	**7,363,966**	**10,479.92**	**15,091,086**	**16,905**	**18,004**

[1] Source: HCF Consumption Data Tables (2003-2012) provided by Ventura Water.

[2] "Other" category includes all other accounted-for water such as construction water, water/sewer system maintenance, measured leakage. In addition, this includes 'grandfathered' users with water entitlements requiring special service conditions.

B. CONSUMPTION AND USAGE FACTORS

Future water demands are calculated using available land use data and corresponding water demand factors. Recently, the City has been utilizing the water demand factors identified in the 2005 General Plan FEIR to calculate future water demands. However, City staff recognize that the demand factors identified in the FEIR are very conservative, planning-level factors. City staff felt it prudent to develop more accurate water demand factors based on recent, historical billing data.

Utilizing land use information provided by the City and quantified in Section 2, water consumption factors were calculated for each consumption category based upon the CY 2012 consumption data provided by the City (Historical Water Consumption). The consumption factor calculations excluded the water consumption data for any specialized, or non-typical, land uses so as not to skew the factors. A consumption factor was calculated for each of the water consumption categories, provided adequate consumption data and land use data was available. Due to an apparent inconsistency in the reported building area, the calculated factor for the "Public/Institutional" category was significantly higher than industry norms. Therefore, for the purposes of this Report one factor was calculated for the "Non-Residential" customers, which included the "Commercial/Retail/Industrial/Hotel" category and the "Public/Institutional" category. Table 3-2 provides detail for how each of the categories consumption factor was calculated. Please note, the calculations in Table 3-2 are considered "raw factors," and do not factor in water loss or contingency.

The raw consumption factors were used as a basis to calculate a "Usage Factor," or planning-level consumption factor. The usage factors adjust the consumption factors to include a 6.5% water loss factor, per the 2010 UWMP, and a 20% contingency (factor of safety) for planning purposes. Table 3-3 provides a summary of the water usage factors recommended for use in calculating all future water demands for projects where development densities are known.

Table 3-2

Calculation of Raw Consumption Factors for CY 2012

City Consumption Category	Water Consumption (HCF) [1]	Water Consumption (gpm)	Water Consumption (gpd)	Water Consumption (AFY)	Units [2]	ksf or acre [2]	Raw Consumption Factor
Single-Family Res.	3,212,783	4,572.2	6,584,005	7,376	22,577		**292 gpd/du**
Multi-Family Res.	1,708,860	2,431.9	3,501,993	3,923	18,511		**189 gpd/du**
Commercial/Retail/Industrial/Hotel	1,491,845	2,123.1	3,057,260	3,425		17,318	**206 gpd/ksf [3]**
Public/Institutional	250,903	357.1	514,179	576			
Hospital/Assisted Living	96,261	137.0	197,269	221	465		**424 gpd/bed**
Park/Landscape/Irrigation [4]	398,875	567.7	817,421	916		522	**1,566 gpd/acre**
TOTAL	**7,159,527**	**10,189.0**	**14,672,127**	**16,436**	-	-	-

[1] Per Table 3-1

[2] Per Table 2-3.

[3] "Public/Institutional" was consolidated with "Commercial/Retail/Industrial" because gross square footages could not be accurately broken out for the two categories.

Table 3-3
Summary of Planning-Level Water Consumption Factors

	Water Demand Factor Classification	Raw Consumption Factor (CY 2012) [1]	Adjustment for Water Loss (+6.5%) [3]	Adjustment for Planning Purposes (+20%) [4]
Residential	Residential (0-8 du/ac)	292 gpd/du	311 gpd/du	370 gpd/du
	Residential (9-20 du/ac)	189 gpd/du	201 gpd/du	250 gpd/du
	Residential (21+ du/ac)	189 gpd/du	201 gpd/du	250 gpd/du
Non-Residential	Commercial/Retail/Industrial/Hotel Public/Institutional	206 gpd/ksf [2]	220 gpd/ksf	265 gpd/ksf
	Hospital/Assisted Living	424 gpd/bed	452 gpd/bed	545 gpd/bed
	Park/Landscape/Irrigation	1,566 gpd/acre	1,668 gpd/acre	2,000 gpd/acre

[1] Per Table 3-2.

[2] "Public/Institutional" was consolidated with "Commercial/Retail/Industrial" because gross square footages could not be accurately broken out for the two categories.

[3] Per 2010 UWMP.

[4] Value rounded-up to nearest 5.

C. USAGE FACTOR COMPARISON

The water usage factors calculated for the City were compared with other southern California water agencies with similar characteristics – population, climate, water supply sources. These included local agencies such as the City Simi Valley and the City of Thousand Oaks, as well as two other southern California agencies that have performed extensive research into calculating usage factors, the Irvine Ranch Water District and the Santa Margarita Water District. When compared to the other agency's factors, the low and medium density residential factors and the parks/irrigation factor calculated for Ventura are on the low side. The high density residential factor and the non-residential factor are both on the high side. Although the factors are either on the low or high side when compared to other agencies, this is likely due to the way Ventura classifies the consumption categories for billing purposes. Overall, the demand factors calculated for the City are within reason when compared to neighboring agencies. The comparison of water usage factors is shown on Table 3-4.

Table 3-4
Water Consumption Factor Comparison

Water Demand Factor Classification		Southern California Agencies				
		City of Ventura [5]	City of Thousand Oaks [1]	VCWWD No. 8 (Simi Valley) [2]	Santa Margarita Water District [3]	Irvine Ranch Water District [4]
Low Density Residential	*Low Density Residential (2-4.5 du/ac)*	-	405 gpd/du	840 gpd/du	-	-
	Residential (0-8 du/ac)	370 gpd/du	-	420 gpd/du	450 gpd/du	405 gpd/du
Medium Density Residential	*Medium Density Residential (4.5-15 du/ac)*	-	310 gpd/du	-	-	-
	Residential (9-20 du/ac)	250 gpd/du	-	-	300 gpd/du	310 gpd/du
High Density Residential	*High Density Residential (15-30 du/ac)*	-	180 gpd/du	-	-	-
	Condominium	-	-	259 gpd/du		-
	Multi-Family Apartment	-	-	222 gpd/du		-
	Residential (21+ du/ac)	250 gpd/du	-	-	175 gpd/du	200 gpd/du
Commercial/Industrial/Retail	Commercial/Retail/Industrial/Hotel	265 gpd/ksf			225 gpd/ksf	
	Public/Institutional					
	Hospital/Assisted Living	545 gpd/bed	-	1.85 gpm/ac	-	230 gpd/ksf
	Commercial	-	130 gpd/ksf	2.00 gpm/ac	225 gpd/ksf	220 gpd/ksf
	Industrial	-	60 gpd/ksf	-	-	-
	Industrial - Light	-	-	2.00 gpm/ac	-	60 gpd/ksf
	Industrial - Heavy	-	-	-	-	5000 gpd/ksf
	Institutional	-	45 gpd/ksf	-	-	-
	School	-	15 gpd/ksf	1.20 gpm/ac	15 gpd/stu	15 gpd/ksf
Parks / Irrigation	Park/Landscape/Irrigation	2,000 gpd/acre	-	-	3.5 AF/ac	3,400 gpd/acre
	Parks, Golf Courses, Open Space, Recreation Areas	-	3,400 gpd/acre	-	-	-
	Open Space, Community Park (Passive) Recreation Facility	-	-	-	100 gpd/acre	-
	Community Park (Active)	-	-	-	200 gpd/acre	-
	Community Facility	-	-	-	2,500 gpd/acre	-

[1] Table III-1, City of Thousand Oaks Water Master Plan, March 2005.

[2] Table III-1, Ventura County Waterworks District No. 8 Water Master Plan, February, 2010.

[3] Table IV-1, Santa Margarita Water District, I.D. Nos. 4C, 4E, 5 & 6 Plan of Works, April, 2012.

[4] Table 3-1, Irvine Ranch Water District, Water Resoruces Master Plan, November 16, 1999.

[5] Table 3-3 herein.

D. HISTORICAL WATER CONSUMPTION (BASELINE DEMAND CONDITION)

To calculate the total near-term water demand, the projected demands must be added to a baseline demand condition. The baseline demand should consider the historical water usage of the entire service area over an extended duration, in order to account for the year-to-year anomalies that can occur. City-wide water demands will vary from year to year based on several factors, including climate, water rates, the local economy, and environmental restrictions among other factors. To determine a recommended baseline, the historical water data was gathered for the past 10-year period. Ventura Water staff provided historical water consumption data for CY 2003 through 2012. Table 3-5 provides a summary of the City-wide water consumption for each year from 2003 to 2012. The consumption numbers are also depicted graphically on Figure 3-1.

As noted in the table, the average annual water consumption for Years 2003-2007 (19,507 AFY) was significantly higher than the average annual consumption for Years 2008-2012 (17,601 AFY). The drop in consumption is likely due to several factors, including improvements to the City's distribution system to control water loss, more aggressive water conservation measures, less construction activity, and a weaker economy. Some of the water use reduction trends may revert back to previous habits, however some will remain. With the State's passing of SB x7-7, all agencies are required to maintain a reduced urban water use target. This bill will result in water municipalities maintaining aggressive water conservation programs.

The historical data was used to develop the baseline demand condition, which is identified in Table 3-5. The City experienced a steady decline in total water consumption from its' peak year of 2007 (19,931 AFY) to the low year of 2011 (16,550 AFY). However, the City experienced an 8.8% increase in water consumption year-over-year from 2011 to 2012. This is indicative of a strengthening economy. Over the most recent 5-year period, the average annual water consumption was 17,601 AFY, with the lowest year approximately 6.0% lower than the average and the highest year approximately 13.2% above the average. Over the 10-year period, the average annual water consumption was 18,554 AFY, with the lowest year approximately 10.8% lower than the average and the highest year approximately 7.4% above the average.

For the purposes of establishing a baseline average annual water demand for the existing condition, it is recommended to use the 10-year average from the preceding ten years of data to capture the various factors influencing water consumption over the recent period. Due to the prolonged economic downturn, the significant restrictions placed on the imported water supply to southern California, and the recent drought conditions, it was determined that a longer period was

necessary to determine the baseline demand condition that is more reflective of a typical demand year. However, the City has identified a large industrial water user that has been significantly reducing their potable water consumption since the early 2000s. The City expects their reduced dependence on the potable water system to be permanent condition; therefore the City feels more comfortable using the most recent 5-year average as the baseline demand condition. Therefore, the baseline water demand established for this Report is 17,601 AFY.

Table 3-5
Historical Annual Water Consumption

Calendar Year	Consumption [1] (AFY)	Averages		
		3-year	5-year	10-year
2003	19,536			
2004	19,773			
2005	18,914		*19,507*	
2006	19,382			
2007	*19,931*			18,554
2008	19,014			
2009	17,871			
2010	16,565		**17,601**	
2011	*16,550*	17,040		
2012	18,004			

[1] Provided by Ventura Water. Includes 6.5% water loss factor.

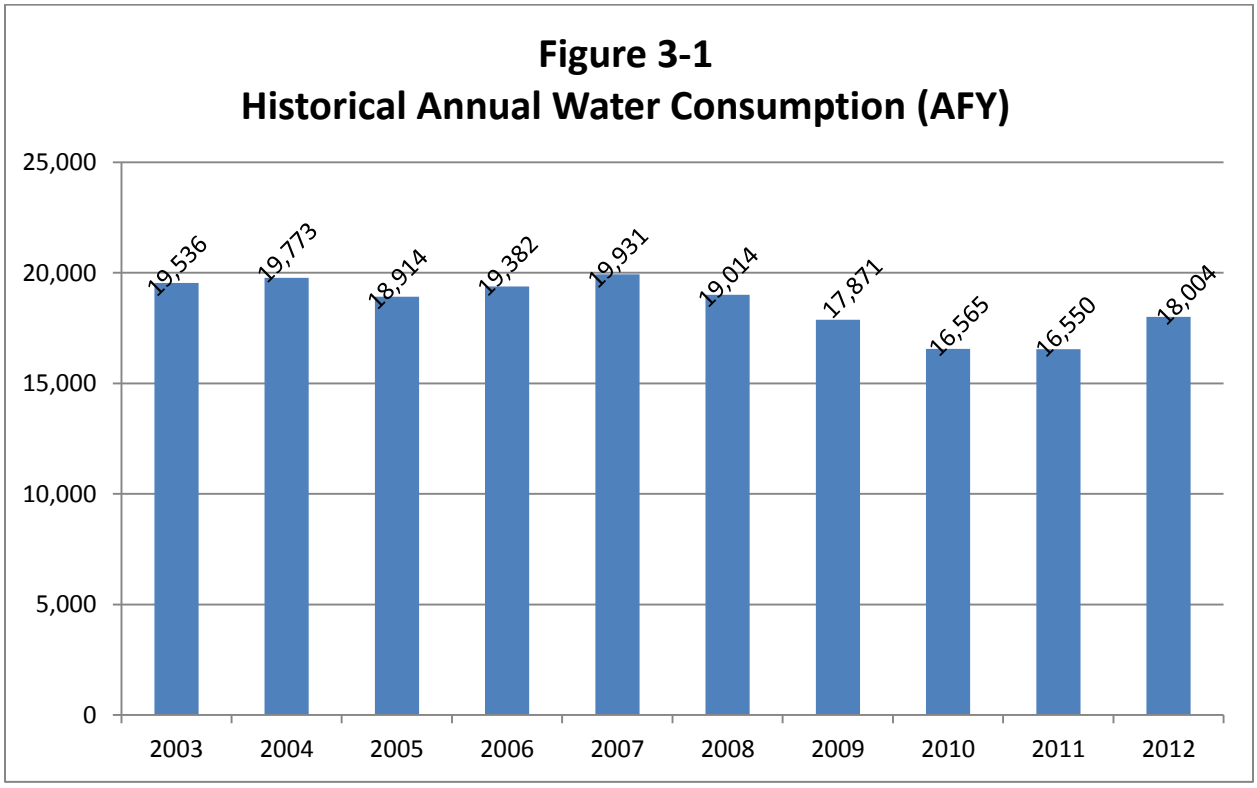
Figure 3-1
Historical Annual Water Consumption (AFY)
25,000
20,000
15,000
10,000
5,000
0
19,536
19,773
18,914
19,382
19,931
19,014
17,871
16,565
16,550
18,004
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012

E. FUTURE DEMAND PROJECTIONS (Approved Projects Only)

This Report will focus only on the near-term demand growth projections. The near-term growth consists of the proposed development projects that have been approved by the City but are not yet connected to the City's water system. This includes projects that are currently under construction, or were under construction in December 2012, and projects that have all City approvals, but have yet to begin construction (Table 2-4).

The future average annual water demand for the near-term growth projects were calculated utilizing the City-specific usage factors calculated above (Table 3-3). The factors were applied to each project in Table 2-4, per the detailed land use breakdown. Table 3-6 summarizes the calculations for the future demand potential. The increased water demand using the City-specific factors is predicted to be 1,042 acre-feet/year (AFY). Table 3-6 also identifies the portion of the near-term demands, 390 AFY, that are predicted to be within the service area of the Casitas Municipal Water District. The projected demands are considered a fully-committed allocation of the water supply.

Under the baseline demand condition, and utilizing the City-specific water usage factors developed herein for the approved development projects, the total near-term water demands are predicted to be 18,643 AFY, as shown on Table 3-7.

In order to estimate the growth of the future water demands, and absorption rate of 350 dwelling units per year (units/year) was utilized (and an equivalent absorption rate for the non-residential development). Based on historical growth data provided by the City, an estimated annual growth of 350 units/year is considered conservative. Assuming the 350 units/year growth rate, the City can expect the projected water demand for the under construction and approved projects to be fully vested by Year 2019, per Table 3-8.

Table 3-6
Total Estimated Demands for Under Construction and Approved Projects

Water Demand Factor Classification	Quantity [1]	Usage Factor [2]	Estimated Average Water Demand		Quantity [4]	Estimated Average Water Demand (within Casitas Boundary)	
Residential (0-8 du/ac)	564 du	370 gpd/du	208,680 gpd	234 AFY	120 du	44,400 gpd	50 AFY
Residential (9-20 du/ac)	1,808 du	250 gpd/du	452,000 gpd	506 AFY	669 du	167,250 gpd	187 AFY
Residential (21+ du/ac)							
Commercial/Retail/Industrial/Hotel Public/Institutional	544 ksf [3]	265 gpd/ksf	144,225 gpd	162 AFY	43 ksf [3]	11,511 gpd	13 AFY
Park/Landscape/Irrigation	0 ac	2,000 gpd/ac	-	-	0 ac	-	-
Hospital/Assisted Living	230 bed	545 gpd/bed	125,350 gpd	140 AFY	230 bed	125,350 gpd	140 AFY
Total			***930,255 gpd***	***1,042 AFY***		***348,511 gpd***	***390 AFY***

[1] Per Table 2-4

[2] Per Table 3-3

[3] Excludes 320,000 SF for the Hospital. Hospital demand calculated "per bed" since an appropriate factor was developed. Includes Hotel SF.

[4] Within Casitas Boundary, per Table 2-4 (included in the total).

Table 3-7
Projected Total Water Demands Including Under Construction and Approved Projects - Various Baselines

Baseline Demand Condition	Baseline Water Demand	Projected Water Demand [1] 1,042 AFY
1-Year: 2012	18,004 AFY	19,046 AFY
3-Year Average: 2010-2012	17,040	18,082
5-Year Average: 2008-2012	**17,601**	**18,643**
10-Year Average: 2003-2012	18,554	19,596
Past 5-Year Period: Annual High Year	19,014	20,056
Past 10-Year Period: Annual High Year	19,931	20,973

[1] Based on Calculated Consumption (Usage) Factors

Table 3-8
Projected Water Demand Growth per Absorption Rate

Year	Total Units [1]	Absorption Rate [2]	Projected Water Demand [3]
2012			***17,601 AFY***
2013		350	17,755
2014		350	17,908
2015		350	18,062
2016		350	18,216
2017		350	18,370
2018		350	18,523
2019		272	18,643
2020			18,643
Totals	**2,372**	2,372	**18,643 AFY**

[1] Per Table 2-4.

[2] Based on City's experience with peak rates of construction activity of approximately 350 units per year. Absorption rate of Commercial, Retail, Industrial, Hotel and Public/Institutional assumed to correlate with the estimated DU absorption rate.

[3] Projections based on Baseline Demand Condition, per Table 3-7.

4. WATER SUPPLY

A. INTRODUCTION

The City's potable water supply is derived from local groundwater basins, Lake Casitas and sub-surface water from the Ventura River. The City also has a 10,000 acre-foot per year allocation from the California State Water Project. To date the City has not received any of this water because there are no facilities to get the water to the City. There are presently five local water sources that provide water to the City water system:

- Casitas Municipal Water District (Casitas)
- Ventura River Foster Park Area (Foster Park)
    - Surface Water Intake
    - Upper Ventura River Groundwater Basin/Subsurface Intake and Wells
- Mound Groundwater Basin (Mound Basin)
- Oxnard Plain Groundwater Basin (Fox Canyon Aquifer)
- Santa Paula Groundwater Basin (Santa Paula Basin)

The City also provides recycled water from the Ventura Water Reclamation Facility (VWRF). The six current water supply sources are presented in the following section. Please refer to Exhibit 4-1 for the locations and boundaries of the City's current supply sources.

VENTURA WATER

Supply Sources

Legend

- Casitas Turnout
- Well
- City of Ventura Treatment Plant or Conditioning Facility
- Groundwater Basins
- Regional Water District Boundaries
- Ventura City Limit

0 0.5 1
Miles

Source: Eagle Aerial, 2010

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Exhibit 4-1

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B. CURRENT WATER SUPPLY SOURCES

1. Casitas Municipal Water District (Casitas)

The City purchases treated water from Casitas Municipal Water District to provide water supply to a portion of the City. In the western portion of the City approximately 30 percent of the City's water accounts are located within the Casitas service area. Storm water runoff from local watersheds is stored in Lake Casitas, located approximately 10 miles northwest of the City, then treated and delivered to customers by Casitas. Casitas supplies potable water to agricultural, domestic, municipal, and industrial users within its service area. The Casitas service area includes the Ojai Valley, the western part of the City, and the coastal area between the City and Santa Barbara County. Use of Casitas water is restricted to areas 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 acre-feet per year (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 which historical data is available.

To maintain the 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 I (wet or average year or 8,000 AFY), or reduced to 7,090 AFY for Stage 2 (dry conditions). This amount is incrementally reduced during Stages 3 and 4 dry weather conditions and results in 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. A possible future impact to the multistage allocation system may be the operation of the fish ladder at the Robles Diversion. Casitas is currently reviewing its allocation program and this may limit the amount of water available to the City.

In July 1995, the City signed the present operating agreement with Casitas establishing the City's minimum annual purchase at 6,000 AFY, which is subject to the allocation program described above during drought periods. However, due to recent demand reductions within the Casitas boundary City customers are currently using approximately 5,000 AFY. The City is presently renegotiating the water supply agreement with Casitas. While additional supply (up to 8,000

AFY) may be available to the City in future years, the present annual supply used within the Casitas district boundary of the City service system is approximately 5,000 AFY. Therefore the City's current reliable water supply from Casitas is 5,000 AFY.

2. Ventura River Surface Water Intake and Upper Ventura River Groundwater Basin/Subsurface Intake and Wells (Foster Park)

Surface water from the Ventura River is collected via surface diversion, subsurface collector, and shallow wells and delivered to the Avenue Treatment Plant through the City's Foster Park facilities. Production from this source is a function of several factors including diversion capacity, local hydrology, environmental impacts, and the storage capacity of the Ventura River alluvium and upstream diversions.

The Ventura River water source is dependent upon local hydrology. Currently, the surface intake structure at Foster Park is unused due to the natural channeling of the active river channel bypassing the structure. Each year the flows can change the position of the active river channel in relation to the intake structure. According to a model of the Ventura River developed in 1984 and modified in 1992, the Upper Ventura River Basin fills after one or more years of above average rainfall. Once full, it takes three successive years of drought, with below average rainfall to deplete the river basin subsurface storage and cause river water production to drop until the drought ends. More recent ongoing studies are looking at the interaction between groundwater diversion and surface water flow in the Foster Park reach.

The Foster Park facilities produce groundwater throughout the year. However, due to storm flows, the wells are subject to inundation and erosion. The early 2005 winter storms destroyed Nye Well 1A and damaged Nye Wells 2, 7 and 8. The pipeline between Nye Wells 7 and 8 along the west bank of the river and the pipeline that crosses the river from Nye Well 8 to the intake pipeline for the Avenue Treatment Plant were also damaged during the storms. Nye Wells 7 and 8 were repaired in late 2006, the pipeline across the river was repaired in late 2007 and the pipeline repair between Nye Wells 7 & 8 was completed in early 2009. To date, Nye Well 2 has not been repaired.

With input from resource agencies and consultants in 2008, the City began conducting studies of the Ventura River flow conditions and is presently operating the Foster Park facilities in an environmentally responsible manner. Presently the City operations staff has voluntarily adopted a

well production schedule that limits its pumping based on annual rainfall conditions. The City intends to work with experts to ascertain a pumping regime that will balance production demands with environmental concerns and is presently studying the relationship between groundwater production and surface flows.

Estimations of approximately 6,000 AFY on average is available based on this operational scenario and is comparable to the 50-year average historical City production records between 1960 and 2009. However, current operational constraints allow a diversion efficiency of up to 70 percent (average 4,200 AFY) to be obtained under the City's operations schedule, which can be considered reliable for planning purposes and is roughly equal to the annual average for the last 10 years. Therefore the City's current reliable water supply from the Ventura River / Foster Park is 4,200 AFY. This supply number may further be drastically reduced by proposed regulatory and environmental constraints.

3. Mound Groundwater Basin (Mound Basin)

The Mound Groundwater Basin has historically provided water for overlying beneficial uses and satisfies agricultural, municipal, and industrial demands. Historical use has been documented to temporarily exceed the yield of the basin and result in water levels that have fallen below sea level and created a threat of seawater intrusion. To abate this threat the City abandoned its historical coastal well facilities and located groundwater extraction near the center of the Mound Basin. A report (Fugro, 1997) compiled as part of a 1996 study of the basin 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.

The 1983 to 1996 average annual production from the Mound Basin was approximately 5,000 AFY (Fugro, 1997). While the resulting water levels in the basin over that time period reportedly ranged from significantly below sea level to a sufficient elevation about sea level to control seawater intrusion, the basin water level trend did not indicate an average production significantly above 5,000 AFY could be sustained without creating adverse conditions.

Currently, two wells withdraw water from the Mound Groundwater Basin; Victoria Well No. 2, which was installed in 1995, and Mound Well No. 1, which began production in April 2003. Victoria Well No. 1, which was installed in 1982, is considered an inactive well at this time due to maintenance and water quality issues and is scheduled for destruction.

Historical agricultural and private well uses have typically extracted about 2,000 AFY while the City's average annual extraction for the last ten years has been approximately 4,000 AFY. Therefore the City's current reliable water supply from the Mound Basin is 4,000 AFY.

4. Oxnard Plain Groundwater Basin (Fox Canyon Aquifer)

Wells near the Buenaventura Golf Course have drawn from the Oxnard Plain Groundwater Basin since 1961. Currently, two wells, Golf Course Wells No. 5 and 6, produce potable water for the City's system and a third well (Golf Course Well No. 3) is out of service for major rehabilitation. This third well could be used as an emergency source and will only return to service during a drought, following the replacement of wellhead, pump, electrical and raw water connection. These wells pump from the Fox Canyon Aquifer of the Oxnard Plain Groundwater Basin.

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 Plain aquifers, in order to operate and restore the basin to a safe yield. In August 1990, the GMA passed Ordinance No. 5, which required existing groundwater users to reduce their extractions by five percent every five years until a 25 percent reduction was reached by the year 2010.

The City's historical allocation was set by the GMA at 5,472 AFY, which was the average extraction from the Golf Course Wells for the base period 1985 to 1989. Beginning in 1992, historical extractions set by the GMA were reduced by five percent (5%) to 5,198 AFY, in 1995 it was reduced to 4,925 AFY, in 2000 it was reduced to 4,651 AFY and further reduced in 2010 to the current allocation of 4,100 AFY. Therefore the City's current reliable water supply from the Oxnard Plain Basin is 4,100 AFY.

5. Santa Paula Groundwater Basin (Santa Paula Basin)

The Saticoy Water Company was acquired by the City in 1968, which included Saticoy Well No. 1 that produced 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. Well No. 2 was placed in

the same general location as Well No. 1. In May 2003, Saticoy Well No. 2 was rehabilitated. After rehabilitation, the resulting sustainable well supply was 1,600 AFY.

In March 1996, the City ended a five-year stalemate over the use of the Santa Paula Basin. Under a court stipulated judgment, the United Water Conservation District (United), the Santa Paula Basin Pumpers Association (an association of ranchers and businesses) and the City all have an interest in the Santa Paula Basin. 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.

If the court finds that the safe yield of the basin is less than the total pumping allocations, then the City may have reductions in pumping allocations. Stage 2 reduces the City's pumping to 1,141 AFY, Stage 3 reduces the City's pumping allocations to 641 AFY, Stage 4 reduces the City's pumping allocations to 481 AFY and Stage 5 reduces the City's allocations to zero.

However, due to the existence of only the one well, the City can only reliably count on the production of that well to provide supply at this time. Therefore the City's current reliable water supply from the Santa Paula Basin is 1,600 AFY.

6. Recycled Water

The City collects and treats wastewater at their Ventura Water Reclamation Facility (VWRF). The reclamation facility has a current capacity of 12 MGD. Average annual flows to the reclamation facility total approximately 9 MGD. A portion of the effluent is pumped to recycled water customers and the remaining effluent is discharged to the Santa Clara River Estuary (Estuary). The recycled water produced from the VWRF is used for general irrigation of the two golf courses, a City park and landscape irrigation areas located along the existing distribution alignment. The City's average annual recycled water demand is approximately 700 AFY.

The City's existing water supply portfolio is summarized in Table 4-1.

Table 4-1
Summary of Current Water Supply

Water Supply Source	Current Supply (AFY)
Casitas Municipal Water District	5,000 [1]
Ventura River / Foster Park	4,200
Mound Groundwater Basin	4,000
Oxnard Plain Groundwater Basin	4,100
Santa Paula Groundwater Basin	1,600
Recycled Water	700
Total	**19,600**

[1] Demand within Casitas service area is approximately 5,000 AFY at this time.

C. FUTURE WATER SUPPLY

1. Casitas Municipal Water District (Casitas)

While additional supply (up to 8,000 AFY) may be available to the City in future years, the present annual supply used within the Casitas district boundary of the City service system is approximately 5,000 AFY. However, as discussed in Section 3, and shown on Table 3-7, it is estimated that the added water supply required to meet the demand of the under construction and approved projects that are located within the Casitas boundary is 390 AFY. Therefore, the anticipated future water supply from Casitas will increase by an equivalent amount, to approximately 5,390 AFY, by Year 2019. Using the absorption rate discussed in Section 3, the estimated supply from Casitas is estimated to increase by 173 AFY in year 2015.

2. Ventura River Surface Water Intake and Upper Ventura River Groundwater Basin/Subsurface Intake and Wells (Foster Park)

In conjunction with the Matilija Dam Ecosystem Restoration Project, two additional wells were installed at Foster Park as part of the mitigation measures. The wells, identified as the Foster Park Wellfield Restoration Project (Wells no. 12 and 13), were constructed by and funded through a grant received by the Ventura County Watershed Protection District for the City in order to mitigate for water lost as a result of increases in turbidity due to the removal of Matilija Dam. To date these wells have not been activated and are not to be operated until the project related impacts after removal of Matilija Dam necessitate the activation of these new wells. These two wells will be operated in accordance with the National Marine Fisheries Biological Opinion for the project.

It is anticipated that future construction of the Foster Park Wellfield Production Restoration Project and the expansion of the Avenue Treatment Plant to its maximum capacity will increase the supply from this source in the future. These improvements are anticipated to restore historical production capabilities to produce up to 6,700 AFY.

3. Mound Groundwater Basin (Mound Basin)

The City anticipates conducting a study within the next few years to review the perennial yield of the Mound Basin and determine if the annual average yield of the basin is still believed to be

accurate. The anticipated future water supply from the Mound Basin will remain approximately 4,000 AFY.

4. Oxnard Plain Groundwater Basin (Fox Canyon Aquifer)

The anticipated future water supply from the Oxnard Plain Basin will remain as 4,100 AFY per the discussions in the previous section on the basin.

5. Santa Paula Groundwater Basin (Santa Paula Basin)

In March 1996, the City ended a five-year stalemate over the use of the Santa Paula Basin. Under an agreement with the United Water Conservation District (United) and the Santa Paula Basin 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.

The City is currently constructing Saticoy Well No. 3, which will improve the water supply from the Santa Paula Basin. It is anticipated that Saticoy Well No. 3 will have an operational capacity of 2,000 gpm, thereby maximizing use of the City's 3,000 AFY allocation from the Santa Paula Basin in the near future.

However, as stated in the previous section on the Santa Paula Basin, there is potential for future reductions in the available supply. Therefore, the anticipated future water supply from the basin has a range from zero to 3,000 AFY.

6. Recycled Water

The City's existing Reclaimed Water Policy continues to encourage the use of recycled water. New development located near existing recycled water mains or within the defined recycled water focus area is required to use recycled water in lieu of potable water for irrigation and other uses as appropriate. In 2007, Kennedy Jenks Consultants completed a study on the potential recycled water market within the City. The total demand within the City limits that could potentially utilize recycled water was estimated at 1.3 MGD. Therefore, the anticipated future water supply from the VWRF at this time is 1,400 AFY.

The City's future water supply portfolio is summarized in Table 4-2.

Table 4-2
Summary of Future Water Supply
From Existing Sources

Water Supply Source [1]	**2015 Supply (AFY)**	**2020 Supply (AFY)**	**2025 Supply (AFY)**
Casitas Municipal Water District [2]	5,173	5,390	5,390
Ventura River / Foster Park	4,200	4,200 - 6,700	4,200 - 6,700
Mound Groundwater Basin	4,000	4,000	4,000
Oxnard Plain Groundwater Basin	4,100	4,100	4,100
Santa Paula Groundwater Basin [3]	0 - 3,000	0 - 3,000	0 - 3,000
Recycled Water	700	700	1,400
Total	**18,173 – 21,173**	**18,390 – 23,890**	**19,090 – 24,590**

[1] None of these numbers preclude the City's water rights.

[2] Supply will be adjusted as demand increases within the Casitas service area.

[3] The Santa Paula Basin Judgment allows the City to utilize on average 3,000 AF annually. There is potential for future reductions, therefore the supply range is shown from zero to 3,000 AFY.

D. POTENTIAL ADDITIONAL FUTURE SUPPLY SOURCES

This section will briefly describe any planned or proposed projects which may affect the water supply sources for the City.

1. State Water Project

The City has a 10,000 acre-foot per year allocation from the California State Water Project (SWP). The base contractual agreements concerning the City's annual entitlement to 10,000 acre-feet of SWP are: (1) the 1963 State Water Supply Contract of 20,000 acre-feet entitlement of SWP water between the Department of Water Resources (DWR) and Ventura County Watershed

Protection District (VCWPD) known formerly as Ventura County Flood Control District (VCFCD); (2) the 1970 agreement between VCFCD and Casitas known formerly as the Ventura Municipal Water District that assigned the 20,000 acre-feet entitlement to Casitas; and (3) the 1971 agreements between Casitas and the City providing the City with an annual entitlement of 10,000 acre-feet and Casitas and United providing United with an annual entitlement of 5,000 acre-feet. Ventura's 10,000 acre-foot entitlement offers the City the potential future advantage of using the SWP entitlement to augment the current water supply. At this time the City does not have the facilities required to deliver SWP water into the distribution system. The City's goal has been to protect and provide the additional water supply for our community, while minimizing the financial impact of keeping this entitlement. Recent information provided to the City estimates the wheeling costs that would be required to pay Metropolitan Water District in order for the City to wheel water through their facilities would be over $1,300/AF, not including the wheeling charges assessed by local agencies.

The City pays annual SWP Table A water fees to DWR, which cover construction costs for SWP facilities and administration to deliver allotments of water throughout the state. In addition, the citizens of Ventura voted November 3, 1993 in favor of desalinating seawater over importing water through the SWP, as the preferred supplemental water supply option. However, based on the City Attorney's review of the City's SWP Table A water, the City cannot unilaterally end its involvement in the SWP's financial obligations and SWP Table A water without great risk.

The Monterey Amendment to the State Water Contract in 1999 provided the City a formal mechanism to allow the City to place their SWP water into a "turn back" pool to be purchased by other SWP contractors. The City has taken part in the SWP "turn back" pool over the past several years which has provided a small annual revenue offset. The City has also worked recently with United who requested to receive the City's allocation at the "turn back" pool rate which provided water benefits to the County area as a whole.

Recent changes in the regulations and the current potential market for state water has provided a possible opportunity for the City to recover a more significant revenue offset. However, at the same time the annual costs associated with SWP water are anticipated to increase substantially while the available supply from the state has gone down resulting in a reduction of allocation to SWP Contractors in recent years to 40-50%. The higher costs and lower supplies are due to proposed projects in the Sacramento-San Joaquin Delta because of several years of drought and environmental concerns over protecting endangered species. The City is evaluating the existing

policy on SWP water and the City's options related to short term and long term leases of its SWP entitlement.

2. Saticoy County Yard Well

In 2004 the County of Ventura proposed relocating their maintenance yard from the existing location to a site within the Saticoy Community contiguous to the City's water system. In exchange for City water service, which required an extraterritorial water service agreement, the County provided the City with a new well and pipeline facilities. The new well was provided to offset the County's anticipated water demand, as well as, provide significant additional water supply. The pipeline facilities provided by the County included approximately 2,320 feet of 14" pipeline from the new well to a location where the City would eventually complete the remainder of the raw water pipeline to the City's existing Saticoy Conditioning Facility for treatment.

A domestic pipeline was also provided that tied into the City's existing pipeline system at two locations. The County's' facilities were completed in 2006. The City's Capital Improvement Program (CIP) Plan included the City's portion of the raw water pipeline that connected the County provided raw water pipeline to the City's Saticoy County Yard Well. The City's' portion was completed in 2009. In November 2009 the City Council was to certify the Final EIR for the Saticoy & Wells Community Plan and Development Code. During the certification process the Fox Canyon Groundwater Management Agency (FCGMA) and United voiced concerns regarding the water supply anticipated from the Saticoy Yard Well for the project area. Consequently, the City approved a *Limitation and Tolling Agreement* whereby the parties agreed to a cooperative Operations Testing Plan to provide testing of the impact of the water drawn from the Saticoy County Yard Well. As a result of the testing under the Operations Plan it was determined that the April 2004 County of Ventura Saticoy Operations Yard EIR was not sufficient for the anticipated operations of the Saticoy County Yard Well and therefore additional environmental clearance is warranted for operation of the well.

Therefore, the anticipated future water supply from the Saticoy County Yard Well is unknown at this time. It should be noted that the City's 2005 Urban Water Management Plan (UWMP) and 2008 Biennial Water Supply Report included the Saticoy County Yard Well as a water supply source of up to 2,400 acre-feet per year.

3. Recycled Water

a. Ventura Water Reclamation Facility (VWRF)

As mentioned previously, currently the City's Water Reclamation Facility (VWRF) discharges most of its tertiary treated effluent to the Santa Clara River Estuary (Estuary) with approximately 700 acre-feet per year (AFY) diverted as recycled water for landscape irrigation by several users.

The City's current and past recycled water planning efforts have centered on issues related to the beneficial uses of the Estuary. These issues have required the City to consider whether or not discharge from the VWRF provided enhancements to the beneficial uses of the Estuary, and consequently affects the amount of recycled water that can supplement domestic water supply. The following describes the history and issues related to recycled water planning within the City's service area.

Historically, the VWRF has been permitted to discharge the majority of its effluent to the Estuary. However, during the 2008 re-issuance process, controversy arose on whether or not the City should be permitted to continue its current volume of discharge into the Estuary. The Discharge Permit issued by the RWQCB allowed continuation of the discharge but required the City to perform three extensive studies.

The studies included the Estuary Subwatershed Study (completed March 2011), Phase 1 Recycled Water Market Study (completed March 2010), and Treatment Wetlands Study (completed March 2010). The Discharge permit also identified a Phase 2 of the Recycled Water Study.

A draft of the Phase 2 Recycled Water Study was recently completed and a Stakeholder Workshop was held at the City on February 21, 2013. The intent of the study was to answer the following question, "What is the best use of the treated water resources from the VWRF to protect the health of the Estuary?" The previous studies mentioned and previous workshops narrowed potential project alternatives down to the most feasible and most beneficial. Some of the alternatives being considered in the Draft Phase 2 Recycled Water Study have the potential of providing the City with some amount of additional water supply in the future. This could be additional recycled water to offset

current potable uses or an additional water supply utilizing indirect or direct potable reuse.

b. Ojai Valley Sanitary District (OVSD)

In 2007, the City in partnership with the Ojai Valley Sanitary District (OVSD), completed a preliminary feasibility analysis for the re-use of effluent currently discharged from OVSD into the Ventura River. The discharge averages approximately 2 million gallons per day, and enters the river approximately 5 miles upstream of the Pacific Ocean. The first part of the analysis focused on environmental issues primarily related to impacts of reduced discharge flow on the receiving environment, and possible impacts to water quality as a function of reduced flows. The second part of the analysis considered engineering and market issues related to different levels of effluent re-use. Ultimately, from an economic perspective, the cost and difficulty of providing the infrastructure necessary to supply recycled water to potential users has to be balanced against the demand for such water, and the willingness of potential users to pay for it.

The engineering and market analysis identified a cost-effective combination of localized users that minimized the additional infrastructure necessary to supply the recycled water. The primary users identified were Aera Energy and local growers, with Aera accounting for the bulk of the demand. These users, which are currently supplied water from the City with a combination of untreated and potable water, could utilize recycled water in the future. The primary users in the 2007 study have reduced their water demands and the combined FY 2011-2012 water consumption of these users is approximately 300 AFY. Collectively, the environment, engineering and market analysis suggested that the re-use of at least a portion of the effluent is sufficiently feasible to justify further consideration, although full CEQA documentation and review will be necessary prior to implementation. The City and OVSD continue to discuss and work together to investigate the potential reuse of OVSD effluent.

4. Ocean Desalination

As indicated in Section D.1 State Water Project, the citizens of Ventura voted November 3, 1993 in favor of desalinating seawater over importing water through the SWP, as the preferred supplemental water supply option. Current information on desalination of seawater presented by

The Pacific Institute recently completed a report entitled, “Desalination, With a Grain of Salt – A California Perspective”. The report indicates that the potential benefits of ocean desalination are great, but the economic, cultural and environmental costs of wide commercialization remain high. Alternatives such as treating low-quality local water sources, regional water transfers, improving conservation and efficiency and accelerating wastewater recycling and reuse can provide the same freshwater benefits of ocean desalination at far lower economic and environmental costs. The Pacific Institute analysis found that the cost to produce water from a desalination plant is high but subject to significant variability with recent estimates for plants proposed in the state ranging from $1,900 to more than $3,000 an acre-foot. City staff has been engaged in discussions with other local water agencies in regard to potential regional desalination projects and will continue to do so.

5. Water Conservation Measures/Water Efficiency Plan

Water conservation measures may help sustain existing water use and delay the need for new water supplies. In 2011, City Council adopted a five-year Water Efficiency Plan that focuses, amongst other efforts, on educating the youth and reducing outdoor landscape watering. Outdoor landscaping accounts for 40% to 60% of water use for residential units. The second year of the plan continues to focus efforts on reducing residential landscape watering. The efforts concentrate on appropriate watering for mature landscape as well as the planting of more sustainable gardens. Ocean Friendly Gardens provide potable water use savings as well as environmental sustainability capturing storm runoff. City efforts now focus on maintaining this savings threshold and possibly providing a buffer in a three year drought period. This will be a continuing challenge for the City.

6. Establish Water Rights Ordinance

In September 2012, Ventura Water took the concept of a water rights ordinance to Council. As new development is proposed, a consistent methodology is important for securing water rights and projecting water demands. To maintain the City’s supply levels and support long term sustainability, Ventura Water is drafting language for inclusion in a new water rights ordinance. The draft language includes providing rights, buying rights to offset new development demand, purchasing the City’s rights as well as the payment of in-lieu fees. Parcels that are within the Fox Canyon Groundwater Management Agency (FCGMA) boundary that use groundwater for current water use have an opportunity to bring water rights with any proposed development. According

to the FCGMA current policies, if a parcel has an “allocation” from a well within the boundary, the “allocation” may be transferred to the City so that the City’s current allocation will be increased by that amount. This would generally be the case where the “allocation” is currently a municipal and industrial use (M&I). In the case where the parcel is in agriculture use and is utilizing the FCGMA’s agriculture efficiency policy then the “allocation” that may be transferred to the City would be 1.5 acre-feet of groundwater “allocation” per acre of land. Parcels that are within the Santa Paula (SP) Basin boundary may have an allocation from an existing well that is serving that parcel or several parcels. Under the SP Basin Stipulated Judgment, the SP Basin Technical Advisory Committee has transfer procedures where a property owner may transfer water rights associated with the parcel to the City.

5. CONCLUSIONS & RECOMMENDATIONS

A. CONCLUSIONS

The City's total water demand for the most recent calendar year (2012) of data was 18,004 AFY. Over the past five years (2008-2012), the City experienced an average annual water demand of 17,601 AFY, and over the past ten years (2003-2012), the annual average water demand was 18,554 AFY. Although there have been extenuating circumstances that have occurred over the previous five year period, including an extended economic downturn, significant restrictions to the imported water supply to southern California, legal challenges to the Ventura River water supply and several years of drought conditions, it is recommended to include a larger data set to predict a "typical" average annual water demand. However, the City has identified a large industrial user that has significantly, and permanently, reduced their dependence on potable water in recent years. Therefore, the City is more comfortable that the 5-year average is more reflective of the current demand condition. Therefore the current baseline water demand is established to be 17,601 AFY.

The City has a total of 47 projects that are under construction or approved for development. These projects include an additional 864,000 SF of non-residential development and 2,372 residential dwelling units. By developing water usage factors based on recent consumption data, the City can more accurately predict the additional future water demand for the approved development projects. Using the City-specific water usage factors, the under construction and approved development projects will generate an additional annual average water demand of 1,042 AFY. Therefore, the estimated water demands that the City is committed to supply total 18,643 AFY. Assuming an average absorption rate of 350 dwelling units per (and the equivalent growth in non-residential development), it is anticipated that the currently under construction and approved projects will be completed by year 2019.

The City's available water supply is constantly changing, depending upon environmental and legal constraints. The City's current available water supply is 19,600 AFY, however at any time the available water supply could drop to an annual average of 18,000 AFY.

The near-term water supply picture to meet the needs of the development projects that are under construction and approved will remain relatively the same as the existing condition, however the

City can expect to increase the water supply from Casitas by 390 AFY to meet the additional water demand in the Casitas boundary.

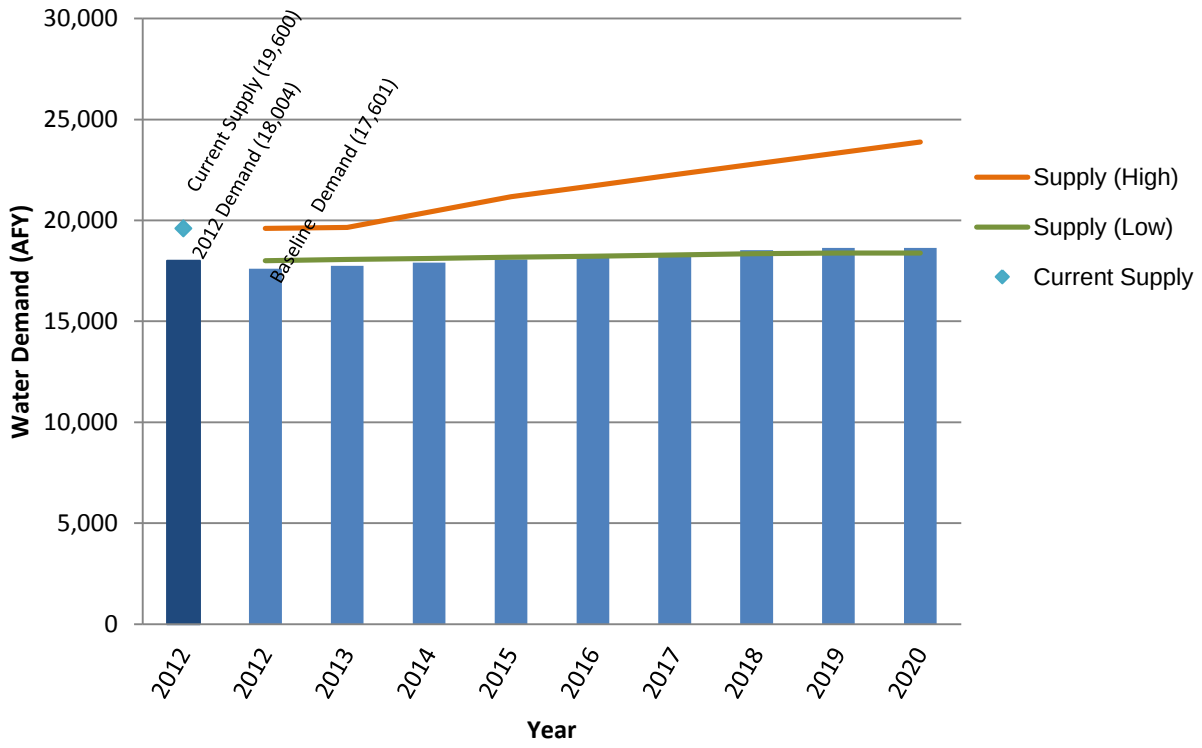
Table 5-1 provides a comparison of the existing water demand and supply, and the near-term water demand and supply. It should be noted that the low end of the water supply range is less than the anticipated demand beginning in year 2017.

Table 5-1
Demand vs. Supply Comparison

Year	Demand AFY	Supply Range			
		Low		High	
		AFY	% Diff.	AFY	% Diff.
2012	17,601	18,000	2.2%	19,600	10.2%
2013	17,755	18,058	1.7%	19,658	9.7%
2014	17,908	18,115	1.1%	20,416	12.3%
2015	18,062	18,173	0.6%	21,173	14.7%
2016	18,216	18,230	0.1%	21,716	16.1%
2017	18,370	18,288	-0.4%	22,260	17.5%
2018	18,523	18,346	-1.0%	22,803	18.8%
2019	18,643	18,390	-1.4%	23,347	20.1%
2020	18,643	18,390	-1.4%	23,890	22.0%

The water supply range and demand projections are also depicted graphically in Figure 5-1.

Figure 5-1
Demand vs. Supply Projection



B. RECOMMENDATIONS

The results of this Report indicate that the spread between the current water demand and the current water supply is very tight, and in some conditions the supply could be less than the demand. This presents challenges for the City moving forward in the ability to allocate water supply to development projects that will generate additional water demands. The recommendations for the City moving forward include:

1. Track the total water consumption on an annual basis.
2. Re-calculate the 3-year, 5-year and 10-year water consumption averages on an annual basis.
3. Update the water supply portfolio on an annual basis.
4. Update the existing land use data on an annual basis. This can be done through a system that tracks the development projects as the transition from “Under Construction” to “Existing,” and “Approved” to “Under Construction.”
5. All future development projects should be evaluated based on current supply and demand conditions.
6. Use the City-specific water usage factors to calculate the water demand of all development projects as the projects proceed through the City process prior to approval.
7. Continue to develop water supply through demand side management, securing water rights, establishing an in-lieu fee ordinance and continue to integrate the new water supply sources into the City’s water supply portfolio.