2018 COMPREHENSIVE WATER RESOURCES REPORT

FINAL Report

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EXECUTIVE SUMMARY

Background and Purpose

In 2010 Public Works conducted a workshop with City Council that included information on the City's 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. A recommendation from the workshop was to provide a comprehensive evaluation of current and projected water supply needs. In June 2013, the first Comprehensive Water Resources Report (CWRR) was developed as a result. The CWRR is intended to be a tool in the development review process as it pertains to water supply and demand. The CWRR tracks proposed development projects, consistently calculates the anticipated increase in water demand associated with each proposed development project, and then evaluates the impact on the current water supply.

Previous Council Action

On June 10, 2013 the City Council approved the first 2013 Comprehensive Water Resources Report. In addition to approving the report, the City Council directed staff to provide an annual update on the City's projected water supply and demand; and to use the local water land use demand factors for the evaluation of all development and the standardized "Water Demand Impact Summary" matrix to quantify the water supply demand of each individual project and the cumulative water supply demand of all approved projects.

On May 5, 2014, the City Council approved the 2014 Comprehensive Water Resources Report.
On May 18, 2015 the City Council approved the 2015 Comprehensive Water Resources Report.
On June 13, 2016, the City Council approved the 2016 Comprehensive Water Resources Report.
On April 24, 2017, the City Council received the 2017 Comprehensive Water Resources Report.

2018 CWRR Updates

The 2018 CWRR is a full-text update rather than an annual update to the previous year's CWRRs which referenced the 2013 CWRR. Major updates to the 2018 CWRR include an extended "worst-case scenario" (drought) assessment per City Council direction and the inclusion of the State Water Project in the future water supply table as emergency/back-up supply per Water Commission request. Additional structural revisions to the 2018 CWRR include refined water supply sections and tables (i.e. Table 4-1: Normal (non-drought), Table 4-2: Current Supply, and Table 4-3: Projected Future Supply) and a new "Programs and Policies" section (see Section 5). Further updates are summarized below.

A summary of the most current and best information available on our water supply and demand is shown in Table ES-1 below.

Table ES-1

Summary of Water Supply and Demand

Projected	2018 Drought (AFY)	2019 Drought (AFY)	2020 Drought (AFY)	2025 (AFY)	2030 (AFY)
Supply	15,321	13,030 – 14,889	13,992 – 15,851	21,441 – 27,870	21,778 – 28,207
Demand*	16,676	16,837	16,998	17,802	18,293
Available Supply	**(1,355)**	**(3,807) – (1,948)**	**(3,006) – (1,147)**	**3,639 – 10,068**	**3,485 – 9,914**

***Demand equals baseline 10 year average (16,515 AF) plus the estimated demand from 350 units built annually from the approved projects list for future years fully vested in 2026 and using an approximate 0.54% growth rate to 2030 (Table 3-8 & 6-1). Assumes a new supply source (VenturaWaterPure) starting in 2025.*

As shown in Table ES-1, the projected 2018, 2019, and 2020 drought water supply numbers are less than the projected water demand numbers. This indicates that if the continued drought condition persists, the City's customers will need to continue to conserve and comply with the Stage 3 water shortage event conservation measures. As shown in Table ES-2 below, the projected drought demand assumes that the City will remain in a Stage 3 water shortage event with mandatory 20% conservation. Table ES-2 indicates that the spread between the projected drought demand and the drought water supply is very tight, and if the drought continues into 2019 the supply could be less than the demand. In addition to continued conservation, the City may be required to use water in excess of the anticipated amounts from the City's water supply sources which could result in the payment of penalties, (i.e. extraction of groundwater from the Oxnard Plain Groundwater Basin in excess of the City's extraction allocation).

Table ES-2

Summary of Drought Water Supply and Drought Demand

Projected	2018 Drought (AFY)	2019 Drought (AFY)	2020 Drought (AFY)
Drought Supply	15,321	13,030 – 14,889	13,992 – 15,851
Drought Demand*	13,341	13,469	13,598
Available Supply	**1,980**	**(439) – 1,418**	**394 – 2,253**

***Drought demand equals a 20% reduction (Stage 3 mandatory conservation) of the demand calculated in Table ES-1.*

Baseline Demand

Utilizing the previous 10-year (2008 to 2017) City annual average, the baseline water demand for the 2018 CWRR is 16,515 AF. The baseline water demand has been decreasing each year (with the exception of the Calendar Year 2016). In February 2014, City Council called for 10% voluntary conservation, followed by the September 2014 City declaration of a Stage 3 Water Shortage Event requiring customers to reduce their use

by 20% due to the prolonged drought. In June 2015, City Council approved a four-tiered (drought) water rate structure. In May 2017, the City Council confirmed that the City remained in a Stage 3 Water Shortage Event.

The annual water consumption figures for the past ten years are provided in subsection 3.D.

Future Demand Projections (Year 2030)

The future demand projections in the previous CWRR included approved projects only at an estimated annual growth rate of 350 units per year (and an equivalent absorption rate is used for the non-residential development). The growth rate was used to project out when the estimated demand (based on approved projects only) would be fully vested. The 2018 CWRR estimates demands to the Year 2030 which is beyond the year that the approved projects would be fully vested. In order to project the estimated demand to the Year 2030, an approximate growth rate of 0.54% (City Planning Department) was used to estimate the increase in demand from the time all approved projects were fully vested (Year 2026) to the Year 2030.

Normal Water Supply

The City's normal (non-drought) water supply is summarized in Table 4-1. The City's normal supplies include Casitas Municipal Water District (Casitas), Ventura River/Foster Park, Mound Groundwater Basin, Oxnard Plain Groundwater Basin, Santa Paula Groundwater Basin, and Recycled Water.

- Casitas: In May 2017, the City Council approved the new Water Services Agreement between the City and Casitas. Based on the new agreement, the five year average normal (non-drought) water supply from Casitas is estimated to be 5,062 AFY. To calculate the normal water supply from Casitas, the demand from the proposed development projects that are anticipated to be utilizing water by Fiscal Year 2018 are added to the five year average normal (non-drought) water supply from Casitas of 5,062 AFY (past five non-drought fiscal years FY 09-10 to FY 13-14). Therefore, the normal water supply from Casitas is estimated to be 5,340 AFY.

- Ventura River/Foster Park: The City's historic production based on the 50-year average production from 1960-2000 was 6,015 AFY. 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. Therefore, the City's normal water supply from the Ventura River / Foster Park is 4,200 AFY.

- Mound Groundwater Basin: The City's average annual extraction from 2000 to 2009 was approximately 4,000 AFY. Therefore, the City's normal water supply from the Mound Basin is 4,000 AFY.

- Oxnard Plain Groundwater Basin (Fox Canyon Aquifer): The City's historical allocation was set by the Fox Canyon Groundwater Management Agency (FCGMA) 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 FCGMA 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 normal (pre FCGMA Emergency Ordinance E) water supply from the Oxnard Plain Basin is 4,100 AFY.

- 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 a court stipulated judgment, the United Water Conservation District (UWCD), the Santa Paula Basin Pumpers Association (SPBPA; 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. In addition, the City has acquired 40.9 acre-feet of water rights in the Santa Paula Basin. Therefore, the City's normal water supply from the Santa Paula Basin is 3,041 AFY.

- Recycled Water: As stated in the 2015 Urban Water Management Plan, the City's average annual recycled water demand is approximately 700 AFY.

The City's normal water supply portfolio is 21,381 AFY and is summarized in Table 4-1.

Current Water Supply

As discussed above, the Current Water Supply section is a new section in the 2018 CWRR. As of May 2018, the City is currently in its seventh year of drought. The City's current water supply sources under existing conditions for calendar year 2018 is summarized in Table 4-2.

- Casitas: The May 2017 Water Services Agreement indicates that in the event that Casitas must enact its Water Efficiency and Allocation Program (WEAP) due to a water shortage, Casitas may adjust the City's allocation consistent with the percentage reduction for the WEAP stage. As of May 2018, Casitas is currently in a Stage 3 water supply condition per Casitas Resolution No. 16-09. In order to be conservative, the 2018 CWRR assumes a reduction of 40% to the City's Casitas supply consistent with the Stage 4 mandates. Therefore, the City's current water supply from Casitas is 3,204 AFY for calendar year 2018.

- Ventura River/Foster Park: Due to the continued drought conditions and heightened environmental requirements, the City's ability to draw water from the Ventura River continues to be significantly challenged and impacted. To determine the City's current water supply with the existing drought

conditions, the five year production average from 2013 to 2017 was selected. Therefore, the City's current water supply from Ventura River / Foster Park is 2,384 AFY for calendar year 2018.

- Mound Groundwater Basin: Due to continued drought conditions and operational constraints, production from the Mound Basin has been lower than the historical 10-year average for the Normal Water Supply. To determine the City's current water supply with the existing drought conditions, the three year production average from 2015 to 2017 was selected. This date range was selected since it reflects drought conditions as well as recent operational constraints due to the current condition of the City's existing wells in this basin. Therefore, the City's current water supply from the Mound Basin is 2,130 AFY for calendar year 2018.

- Oxnard Plain Groundwater Basin (Fox Canyon Aquifer): Per approval of Emergency Ordinance E in 2014, the City's Temporary Extraction Allocation (TEA) is 4,827 AFY (based on an operator's average annual reported extractions for 2003 through 2012). Phased reductions were set beginning July 1, 2014 with a 20% total reduction of the TEA on January 1, 2016. The ordinance remains in effect from the date of adoption and reviewed every eighteen months, unless superseded or rescinded by action of the FCGMA Board or a finding by the FCGMA Board that the drought or emergency condition no longer exists. Therefore, the City's current water supply from the Oxnard Plain is 3,862 AFY for calendar year 2018.

- Santa Paula Groundwater Basin (Santa Paula Basin): The Santa Paula Basin Judgment allows the City to utilize 3,000 AFY. No reductions to this supply is anticipated for this year; therefore, the City's current water supply from the Santa Paula Basin is 3,041 AFY (includes City acquired water rights) for calendar year 2018.

- Recycled Water: As stated in the 2015 Urban Water Management Plan, the City's average annual recycled water demand is approximately 700 AFY. Therefore, the City's current recycled water demand is 700 AFY for calendar year 2018.

The City's current water supply for 2018 (drought) is 15,321 AF and summarized in Table 4-2.

Projected Future Water Supply

The City's projected future water supply numbers forecasts an additional two years of drought through 2020 (for a total duration of a nine year drought) and evaluates supply through 2030. The projected future water supply also assumes that the City will revert to normal conditions in 2025 through 2030. The City's projected future water supply takes into account impacts from the Sustainable Groundwater Management Act of 2014. The City's projected future water supply is summarized in Table 4-3.

- Casitas: As mentioned previously, Casitas is currently in a Stage 3 water supply condition. This report assumes a reduction of 40% to the City's Casitas supply for the 2019 Supply Drought Impact and a 50% reduction for 2020. Therefore, the City's projected supply from Casitas for 2019 is 3,128 AFY (40% reduction) and 2,675 AFY in 2020 (50% reduction). The Casitas projected supply in 2025 and 2030 includes growth projections within Casitas' boundaries. Therefore, the City's projected supply from Casitas is 5,669 AFY for 2025 and 5,841 AFY for 2030.

- Ventura River/Foster Park: If the current drought continues through 2020, the supplies will be further impacted. To determine the 2019 and 2020 supply drought impact, the average of the two most recent driest years (2015 and 2016) was used for the projections. Therefore, the projected future water supply for 2019 and 2020 from the Ventura River / Foster Park is 1,573 AFY.

  The 2025 and 2030 projected future water supply assumes normal conditions. The 2018 Capital Improvement Program includes the Foster Park Wellfield Production Restoration project, which is scheduled to be completed by 2025. The project involves the replacement of the destroyed wells and construction of new facilities to restore historic production capabilities of 6,700 AFY. The low end equals the City's highest production value for the past 10 years (2008 to 2017), and the high end equals the expected production from the completed Foster Park Wellfield Production Restoration project. Therefore, the projected future water supply for 2025 and 2030 from the Ventura River / Foster Park is 3,647 – 6,700 AFY.

- Mound Groundwater Basin: Mound Wells 2 and 3 are anticipated to come online within the next few years. Thus, the projected water supply from the Mound Basin for the future is greater than the current 2018 supply of 2,130 AFY (discussed in the Current Supply section above). Although 2019 and 2020 future projections are evaluated under drought impact, the addition of Mound Wells 2 and 3 will help alleviate current operational constraints. The 2019 supply numbers were calculated using the most recent five year production average (2013 to 2017). Therefore, the projected future water supply for 2019 from the Mound Basin is 2,585 AFY. To calculate the 2020, 2025, and 2030 supply numbers, the 10 year average (2000 to 2009) from the Mound Basin was used. Therefore, the projected future water supply from the Mound Basin from 2020 to 2030 is 4,000 AFY.

- Oxnard Plain Groundwater Basin (Fox Canyon Aquifer): As discussed in the Current Water Supply section, the City's allocation is 3,862 AFY until further action is taken by the FCGMA. Therefore, the projected future supply from the Oxnard Plain Basin for 2019, 2020, 2025, and 2030 is 3,862 AFY.

- Santa Paula Groundwater Basin (Santa Paula Basin): As discussed previously, the Santa Paula Basin is subject to a stipulated judgment and is managed by the Santa Paula Basin Technical Advisory Committee (TAC) with equal representation from UWCD, SPBPA, and the City. The TAC is

charged with various responsibilities including establishing a program to monitor conditions in the basin. If basin conditions change, 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. Currently, the TAC is working on various basin management measures, including potential triggers for the above stages and potential projects to enhance the sustainable yield of the basin.

Based on the information above, the low range of this water supply remains at 1,141 AF for the projection of the drought through 2020 and in 2025 to 2030 under normal conditions. This is based on an assumed worst case scenario that the basin will be determined to be in a Stage 2 overdraft per the Court's Stipulated Judgment. Additional water rights of 40.9 AF total were acquired for the past development of Tract 4632, Phase I of Tract 5632, and Tract 5774.

Therefore, the projected future water supply in 2019, 2020, 2025 and 2030 is a range of 1,141 to 3,000 AFY for the original City allocation and 40.9 AFY for City acquired water rights.

- Recycled Water: The estimated anticipated future water supply for recycled water is based on the 2015 Urban Water Management Plan projections for recycled water.

- VenturaWaterPure: The City's Ventura Water Reclamation Facility (VWRF) treats the wastewater generated by the City's 30,000 homes and businesses to stringent standards before releasing the tertiary treated effluent to the Santa Clara River Estuary (SCRE) with approximately 700 AFY diverted as recycled water for landscape irrigation. This water is regulated with a permit issued by the Los Angeles Regional Water Quality Control Board (RWQCB or Regional Board), which is renewed every five years.

  Prior to the adoption of the renewed VWRF NPDES permit in 2008 (Order R4-2008-0011), a number of questions arose regarding the definition of enhancement, the benefits that the discharge provides to the SCRE and adjacent subwatershed, and how discharge practices could be modified over time to protect and enhance habitat and water quality of the portion of the SCRE directly affected by the VWRF discharge. To address these issues, the Regional Board required the City to complete a series of three Special Studies as a condition of the City's NPDES discharge permit. A full summary of the Phase 1, Phase 2, and Phase 3 Special Studies is provided in the Water Supply section.

  During this time, the City entered into the Tertiary Treated Flows Consent Decree and Stipulated Dismissal (Consent Decree) with the Wishtoyo Foundation/Ventura Coastkeeper and Heal the Bay. The Consent Decree requires a determination, through scientific analysis, of the maximum

ecologically protective diversion volume (MEPDV), which is defined as the volume or flow of VWRF tertiary treated effluent appropriate to divert from the discharge to the SCRE while still protecting the ecological resources of the SCRE, and the surrounding subwatershed, including the SCRE's sensitive native species and habitats, and particularly those listed for protection under the state and federal Endangered Species Acts.

In 2015, the City initiated a pilot project to test the feasibility of constructing an advanced water purification facility (AWPF) to maximize quantity and reliability of potable supplies by purifying tertiary treated effluent produced by the VWRF and optimizing its potable reuse, rather than discharging into the SCRE. The pilot facility produced favorable results and as a result, the City is proposing to construct a full-scale AWPF as a component of VenturaWaterPure to augment the City's water supplies and increase local water supply reliability to meet projected future demands, and to divert discharges from the SCRE to water reclamation uses consistent with the Consent Decree.

The Phase 3 Studies were conducted 2014 to 2018 and evaluated multiple VWRF diversion/continued discharge scenarios ("discharge scenarios") over a range from 0 percent diversion (i.e., continuation of current average flow rate) up to 100 percent diversion of the current discharges (i.e. zero continued discharge) to the SCRE, and also included special studies on nutrient, dissolved oxygen, toxicity, and groundwater.

The completed Phase 3 Study was submitted to the Regional Board on February 20, 2018. The Phase 3 Study found that an MEPDV of between 40-60 percent (1.9 – 2.8 MGD) of current flow in dry-weather closed mouth conditions would be protective of the ecological functions of the SCRE, including aquatic habitats supporting native fish species, nesting and foraging habitat for many native birds as well as other wildlife species. While the diversion volume (i.e. the available supply for potable reuse) is 2.8 MGD under current flow, it is expected to increase as additional wastewater flow becomes available, provided that the Continued Discharge Level of 1.9 MGD is maintained during closed-mouth, dry-weather conditions. The Phase 3 Estuary Studies Report is subject to review by an independent scientific review panel (SRP), the Regional Board, and other resources agencies.

Since a specific diversion volume has not been selected or approved, the range of 2,381 to 3,898 AFY provided in previous reports will be maintained in this year's report for years 2025 and 2030. This figure will be updated in future reports when the diversion volume becomes more certain.

- State Water Project: The City has a 10,000 acre-foot per year allocation from the California State Water Project (SWP). To date, the City has not constructed the improvements necessary to receive direct delivery of its allocation. Ventura Water is pursuing the State Water Interconnection Project with Calleguas Municipal Water District (Calleguas), Casitas Municipal Water District, and United Water Conservation District. On January 23, 2017, City Council authorized an alignment study by

Kennedy/Jenks to determine how the interconnection project can be designed and operated to supply water to serve the regional needs of the City, Calleguas, Casitas, and UWCD. The final draft alignment study is under review at this time, and the environmental review process pursuant to CEQA has commenced.

On February 28, 2018, the City issued the Notice of Preparation of a Draft Environmental Impact Report (EIR) for the State Water Interconnection Project (NOP). As stated in the NOP, the project will enable delivery of SWP water by wheeling through Metropolitan Water District of Southern California and Calleguas to the City. The connection will also facilitate direct delivery of SWP water to United and direct or in-lieu delivery of SWP water to Casitas. In addition, the interconnection would allow the City to deliver water to Calleguas during an outage of its imported water supplies. The draft EIR is scheduled for release in fall of 2018.

While the City's water supply contract for SWP water provides the City with a maximum annual allocation of 10,000 AF, the actual allocation of available water is set by California Department of Water Resources (DWR) annually. Based on historical allocations the range of available SWP water has been 5% to 100% over the last 25 years. Given the uncertainty of SWP deliveries and the fact that capacity in MWD and Calleguas' systems must be available in order for water to be wheeled to the City, a range was selected for 2025 and 2030 projected supplies. Therefore, the projected available water supply in 2025 and 2030 for SWP water delivered by the State Water Interconnection Project is estimated to be 0-10,000 AFY. The water projected to be delivered by the SWP will not provide any increased water supply volume for the City, but it will give the City flexibility to utilize SWP when it is available in lieu of water from Casitas, groundwater, or Ventura River water. These operational details will be developed through the environmental review process and negotiations with project partners and will be reflected in future CWRRs. Additional benefits to the City include making up for losses in annual yield from existing supply sources (Lake Casitas, Ventura River, and groundwater), improving water quality, and providing an emergency/backup supply for Ventura Water's proposed potable reuse project, VenturaWaterPure.

Potential Additional Future Supply

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

- Ocean Desalination: At this time, Project 74070 Advanced Wastewater Treatment Plant Land Acquisition is listed in the City's Adopted 2016-2022 CIP. The land acquisition is for the expansion of the City's water supply for the construction of potential advanced water purification facilities for potable reuse and/or desalination. The project's time schedule includes planning from 2016 to 2018.

  According to the Notice of Preparation of a Draft Environmental Impact Report dated November 1,

2017 for the Ventura Water Supply Projects, the treatment processes required for desalination would be similar to the Advanced Water Purification Facility (discussed in the VenturaWaterPure section above) proposed for the potable reuse project. The potential ocean desalination project would allow ocean water to be used to produce potable water and establish a reliable source of water to provide resiliency during prolonged drought. Since details of the ocean desalination project is in a preliminary stage, ocean desalination is identified as a potential additional future supply source.

RECOMMENDATIONS

The results of this Report indicate that the spread between the current water demand and the current water supply is very narrow. If the continued drought condition persists, the supply could be less than the demand. The City's customers will need to continue to conserve and/or pay penalties for overuse of the City's water supply sources while the City secures new water supplies. This presents significant 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 they transition from "Approved" to "Under Construction" and "Under Construction" to "Existing".
5. All future development projects should be evaluated based on current supply and demand conditions.
6. Consider adding a new project type in the land use tracking spreadsheet for approved projects under CIP or other City approval processes.
7. 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.
8. Continue to develop water supply through demand side management, secure water rights, administer the Water Rights Dedication and Water Resource Net Zero Ordinance as approved in July 2016 and continue to integrate the new water supply sources into the City's water supply portfolio.

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1. INTRODUCTION

A. BACKGROUND

In the western United States, water resources are challenged by drought conditions, ecosystem habitat protection, and water quality concerns. The City of San Buenaventura (City) is no exception. Changing pressures on our local water sources have driven the need to create a more integrated approach to our water supply, demand, and infrastructure management. In 2010, a workshop on the City's water supply issues was held. As a result of the workshop, City Council directed the City to provide a comprehensive evaluation of current and projected water supply needs. Following this recommendation, Ventura Water and the Community Development Department worked together in late 2012 and early 2013 to provide input and expertise on what development had taken place since the 2005 General Plan through 2012, the projects currently approved for development within the City and the potential for additional development through 2025.

In order to better determine the water demands from those developments, three existing documents were reviewed: 1) 2005 General Plan, 2005 General Plan FEIR and 2007 Supplement, 2) 2010 Urban Water Management Plan (amended in 2011), and 3) 2011 Water Master Plan. The purpose of the review was to compare land use data (if applicable) and historical figures and future projections for water demand and water supply. A review of the three documents showed differences as each report was completed at a different time, with different data available, and for a specific purpose and/or audience. A summary of the purpose of the three reports and comparison for land use, water supply, and water demand is depicted in Table 1-1.

To reconcile the differences in the historical documents and establish a baseline of conditions in the City in 2012, Ventura Water and Michael Baker (formerly RBF Consulting) worked together to determine existing land use, existing demands, and normal supply. In order to look at future projections for land use, assumptions were made about future development (discussed further in the Land Use Section). In order to resolve conflicts identified in the previous reports related to future water supply / water demand projections, new demand factors were calculated based on calendar year 2012 data (refer to Water Demand Section D below). Thus, the first Comprehensive Water Resources Report was developed in June 2013.

B. PURPOSE OF REPORT

In 2013, the Comprehensive Water Resources Report (CWRR) was developed as an annual water management tool. The CWRR is intended to be a tool in the development review process

as it pertains to water supply and demand. The CWRR provides an annual look at the City's water demand trends, current water demands, demand projections, and the current and future supply picture. The purpose of the CWRRs is to track 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. The CWRRs specifically focus on water demand of approved (entitled) projects and on near-term demand changes. The annual CWRRs are an important tool that the City utilizes to update the City's annual projected water supply and demand outlook. The 2013 CWRR was approved by City Council in June 2013.

The 2013 CWRR was the first annual version of this report and included historical information related to the genesis of this report and previous studies prepared. The subsequent 2014 to 2017 CWRRs were prepared as supplements to the previous year's document and approved by City Council. Background information provided in the 2013 CWRR that did not change was not included in the 2014 to 2017 CWRRs. Beginning with the 2018 CWRR, the CWRR will be a stand-alone document that will include relevant information from the original 2013 CWRR, updates to existing land use information, water demand data based on the previous calendar year's data, and the City's future water supply portfolio based on the best available information regarding the City's existing and potential future supply sources. The water demand projections will also be updated in order to capture the current water use patterns within the City.

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 bounded 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 bounded by the Ventura River, while the southern portion is bounded 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.

At this time 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 three 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.

D. DEMAND FACTORS

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.

City-specific water demand factors were calculated in the 2013 CWRR. For a full discussion, refer to Section 3 – Water Demands. These demand factors have been used in the 2013 CWRRs and all subsequent CWRRs. It should be noted that the water demand factors calculated in the 2013 CWRR will not be updated on an annual basis. The water demand factors will be re-visited every 10 years, unless there is a significant change in the year-over-year annual demand (quantified as a 30% in two-year period).

MATCHLINE

Avenue Water Treatment Plant

Ventura River

33

101

Two Trees

City Hall

Public Works Maintenance Facility

City of Ventura

126

County Government Center

101

Pacific Ocean

Ventura Water Reclamation Facility

Santa Clara River

101

126

City of Oxnard

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

RBF CONSULTING
A Baker Company

Exhibit 1-1

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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.

E. CURRENT PLANNING DATA

The Community Development 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 periodically as new projects are proposed or existing projects are modified.

The Department provided actual development data (“Built” projects) for the year ending December 2017, and data on all projects that are under construction or have received all planning approvals (“Approved” projects) for development, as of December 31, 2017. This Report will consider the estimated water demand 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, 2017 were not considered in the future water demand projections for this Report.

2. LAND USE

A. BACKGROUND

In order to determine the existing land use make-up within the City's water service area as of year-end 2012 for the 2013 CWRR, the land use data published in the 2005 General Plan was used as a starting point. Table 2-1 provides a summary of the development as of year-end 2004 within the General Plan land use categories in dwelling-unit count and square footage. Exhibit 2-1 depicts the land use designations throughout the City as identified in the 2005 General Plan. Table 2-2 summarizes data for all projects built from 2005-2012, which breaks land uses down into non-residential categories and residential categories. The City Planning Department provided a listing of all projects "built" from 2005-2012, including back-up data. 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.

B. EXISTING LAND USE

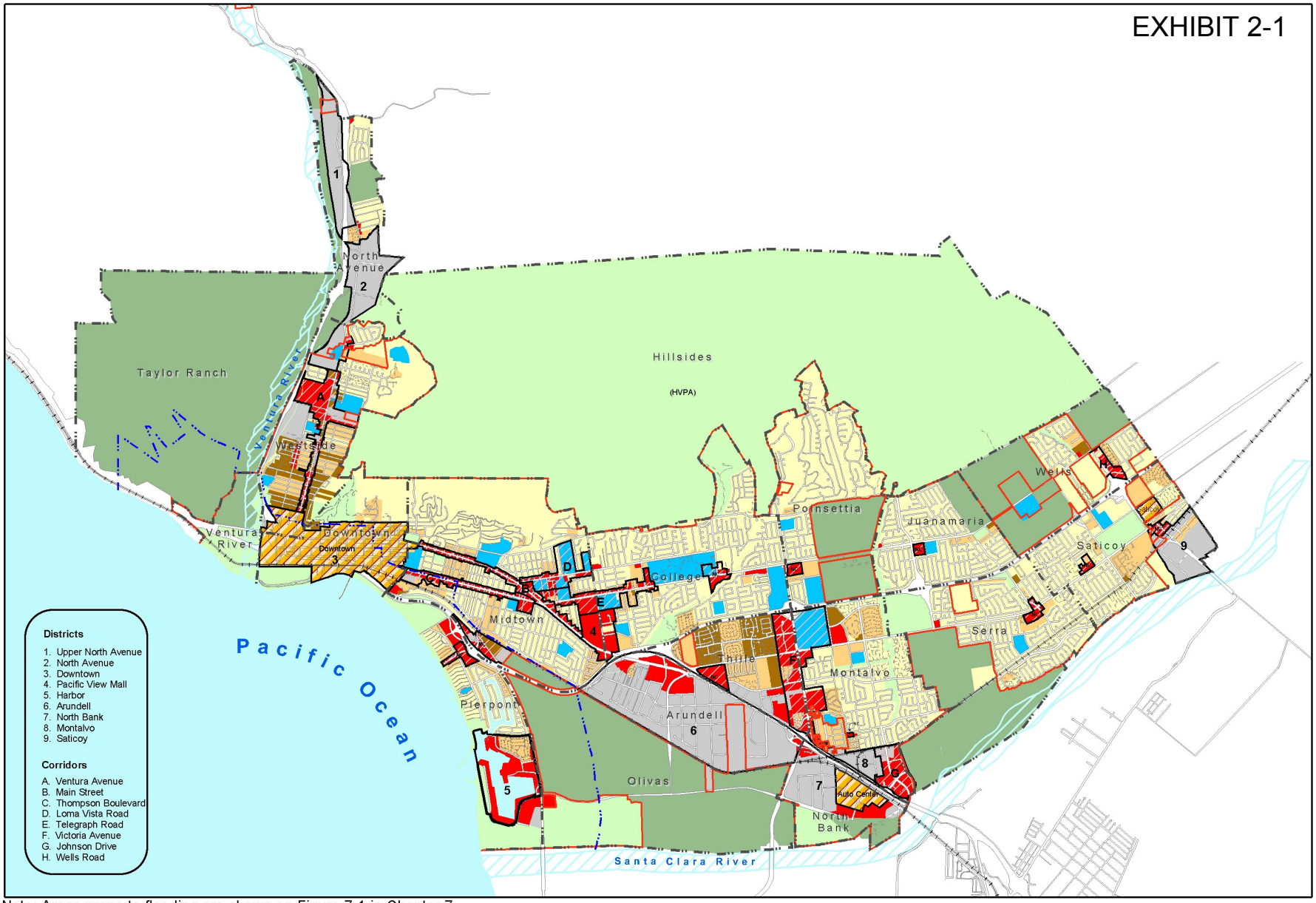
Table 2-3, which has been updated on an annual basis since 2013, provides a summarized total of the existing land use within the City service area. For the purposes of this report, the existing land use picture is considered the year-end of 2017. In order to determine the existing land use make-up within the City's water service area as of year-end 2017, all known development projects constructed and utilizing water within Calendar Year 2017 were added to the land use data published in the 2017 CWRR for the year-end 2016. It should be noted that Table 2-3 only includes projects/units that were constructed and utilizing water as of the end of the recent calendar year.

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

EXHIBIT 2-1



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

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

GENERAL PLAN DIAGRAM
- City Limits
- Planning Communities
- California Coastal Zone Boundary

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 2017

	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
Constructed (Built Projects 2013) [3]	28	0	4,356
Constructed (Built Projects 2014) [4]	0	0	147,060
Constructed (Built Projects 2015)[5]	59	114	0.00
Constructed (Built Projects 2016)[6]	0	40	7,360
Constructed (Built Projects 2017)[7]	9	153	29,637
Total Existing Land Use (through 2017)	**22,673**	**18,818**	**17,506,009**

[1] Per Table 2-1

[2] Per Table 2-2

[3] Per data provided by Ventura Water, Built Projects part of CY 2013 water demand (Aldea Hermosa: 28 SFDU and Chick-Fil-A: 4,356 SF).

[4] Per data provided by Ventura Water, Built Projects part of CY 2014 water demand:

- PROJ-04282 4,829 SF Office Bldg.
- PROJ-2695 7,434 SF Bank Office Bldg.
- PROJ-5097 134,797 SF Beverage Distribution Center (Commercial)

[5] Per data provided by Ventura Water, Built Projects part of CY 2015 water demand:

- PROJ-5211 Citrus Apartments; 54 Multi-Family Residential Units
- PROJ-6355 Orchard Collection; 59 Single-Family and 60 Multi-Family Residential Units

[6] Per data provided by Ventura Water, Built Projects part of CY 2016 water demand:

- PROJ-7286 Union Bank; 4,860 SF
- PROJ-6187 Castillo Del Sol; 40 Affordable Housing Units and 2,500 SF Commercial

[7] Per data provided by Ventura Water, Built Projects part of CY 2017 water demand:

- PROJ-03743 Cannery Row LLC; Mixed Use - 2,156 SF and 78 Mult-Family Residential Units
- PROJ-01857 Hearthside - Jenven Village; 51 Condominiums
- PROJ-7215 CMH Parking Structure; 1,399 SF Retail Liner
- PROJ-7290 Santa Clara Courts; 24 Condominiums
- PROJ-6098 La Barranca; 9 Single-Family Units
- PROJ-10123 New Volkswagon Dealership; 21,975 SF
- PROJ-8794 Uncle Don's Liquor; 725 SF Addition
- PROJ-8641 Kia Addition; 3,382 SF
- PROJ-10085 Kellogg Park Zone Change

Note: This table only includes projects/units that were built and utilized water during the noted calendar year. The projects/units were included in the previous CWRR Table 2-4 and have been removed from the current CWRR Table 2-4.

C. FUTURE LAND USE

The City maintains a database of projects that are in the City's planning process. The database includes all projects 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 as of December 31, 2017 are shown on Table 2-4. Table 2-4, updated on an annual basis, 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 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 2005-2017, 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 by the density.

Table 2-4
Summary of Approved and Under Construction Projects - as of December 2017

						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)	Park / Irrig. Area (ac)	Single-Family (Units)	Multi-Family (Units)	Total (Units)	Total Daily Demand (GPD)	Total Annual Demand (AFY)
PROJ-00687 [3]	Mixed Use	VILLA SAN CLEMENTE (STAJEN)	All Planning Approvals	YES	Mixed Use - Condominiums/Commercial	5,554	0	0	0	0	5,554	0	0			10	10	3,972	4.45
PROJ-00756	Mixed Use	ANASTASI - HARBOR & SEAWARD	All Planning Approvals	NO	Mixed Use - Commercial/Residential	20,230	0	0	0	0	20,230	0	0			138	138	39,861	44.65
PROJ-7910(was PROJ-01520)	Mixed Use	THOMPSON VILLAGE - CDRC (V2V Ventures)	All Planning Approvals	YES	Mixed Use - Condominiums/Commerical	0	0	0	0	0	0	0	0			29	29	7,250	8.12
PROJ-7813[3]	Mixed Use	WESTSIDE VILLAS (Previously PROJ-02225)	All Planning Approvals	YES	Mixed Use - Condominiums/Commercial	1,573	0	0	0	0	1,573	0	0			40	40	10,417	11.67
PROJ-03617	Industrial	FPA LAND DEV/VICTORIA CORP C	All Planning Approvals	NO	7 industrial office buildings	0	0	158,984	0	0	158,984	0	0				0	42,131	47.19
PROJ-8446 [3] [4]	Residential	UC HANSEN TRUST SP	Under Construction	NO	131 Single Family, 34 Condominiums	0	0	0	0	0	0	0	0		131	34	165	56,970	63.81
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	107,420	120.31
PROJ-03864	Commercial	VOOV	All Planning Approvals	NO	New 2-story office building.	0	0	0	0	6,400	6,400	0	0				0	1,696	1.90
PROJ-03865[9]	Residential	MATILIJA	Under Construction	YES	28 Condominiums	0	0	0	0	0	0	0	0			28	28	7,000	7.84
PROJ-04154[9]	Residential	SOLANA HEIGHTS (Previously Westside Rennaissance)	Under Construction	YES	120 Single Family Residence, 36 Condominiums, 2.55 AC Parks	0	0	0	0	0	0	0	0	2.55	120	36	156	58,500	65.52
PROJ-04315[7][9]	Residential	MATLIJA INVESTMENT GROUP (11 S. Ash)	Under Construction	YES	15 Condonimiums	0	0	0	0	0	0	0	0			15	15	3,750	4.20
PROJ-6237	Mixed Use	SONDERMANN-RING-Amendment	Under Construction	NO	Mixed Use: 300 apartments Units; 20,292 sq ft commercial/retail; private indoor and outdoor recreational facilities incl 2.44 acre park and waterfront promenade	20,292	0	0	0	0	20,292	0	0	2.44		300	300	85,257	95.49
PROJ-04691	Residential	CHAPMAN, MIKE	All Planning Approvals	YES	7 Apartments approved (duplex constructed, 5 additional units pending construction)	0	0	0	0	0	0	0	0			7	7	1,750	1.96
PROJ-1126	Residential	HEMLOCK APARTMENTS	All Planning Approvals	YES	23 Apartments	0	0	0	0	0	0	0	0			23	23	5,750	6.44
PROJ-7125 [3] (was PROJ-1200)	Mixed Use	LOGUE	All Planning Approvals	YES	Mixed Use - 125 Condominium Units & 7300 sf commerical	7,300	0	0	0	0	7,300	0	0			125	125	33,185	37.17
PROJ-1678[9]	Institutional	CMH - NEW HOSPITAL	Under Construction	YES	New hospital building adaptive reuse of existing hospital (121,000 sf) for non-essential hospital support services & 104,000 sf for new backfill medical office reuse, new street extensions & new public plaza (320,000 sf -new and 230 beds)	0	0	0	320,000	0	320,000	230	0				0	125,350	140.40
PROJ-2008	Residential	ISLAND VIEW APARTMENTS - WESTWOOD COMMUNITIES	Under Construction	NO	154 Apartments	0	0	0	0	0	0	0	0			154	154	38,500	43.12
PROJ-5616[2]	Commercial	MARRIOT RESIDENCE INN	All Planning Approvals	NO	125 room Residence Inn	0	87,000	0	0	0	87,000	0	125				0	23,055	25.82
PROJ-4154[1]	Residential	EAST VILLAGE RESIDENTIAL - CEDC Apartments	Under Construction	NO	50 Low Income Apartments	0	0	0	0	0	0	0	0			50	50	12,500	14.00
PROJ-4222[3]	Residential	PARKLANDS APARTMENTS	Under Construction	NO	173 Apartments with Community Building	0	0	0	0	0	0	0	0			173	173	43,250	48.44
PROJ-4184[2]	Residential	ENCLAVE AT NORTHBANK - WATT COMMUNITIES	Under Construction	NO	Density Bonus Concessions for 91 residential units consisting of 77 single-family units and 14 multi-family (7 duplexes)	0	0	0	0	0	0	0	0	2.52	77	14	91	37,030	41.48
PROJ-6263	Residential	SANTA CLARA APTS - 1254 & 1268 E. Santa Clara St.	All Planning Approvals	YES	8 Apartments	0	0	0	0	0	0	0	0			8	8	2,000	2.24
PROJ-7213[9]	Commercial	398 ASH ST - TRAILER HOTEL	Under Construction	YES	New airstream trailer park (34 units)	0	0	0	0	0	0	0	0		34		34	12,580	14.09
PROJ-7323 (was PROJ-04543)	Mixed Use	2200 E MAIN ST - ANASTASI (ASBELL) (formerly Renaissance Holdings)	All Planning Approvals	YES	Mixed Use: 26 Condominium Units & 3896 sf Commerical	3,896	0	0	0	0	3,896	0	0			26	26	7,532	8.44
PROJ-6702	Commercial	BEST WESTERN - 708 E THOMPSON BL- REMODEL	All Planning Approvals	YES	Remodel 2 existing motel rooms into a gym and meeting room and replace the 2 rooms within a new 2nd story addition (555sf)	0	555	0	0	0	555	0	0				0	147	0.16
PROJ-04469	Commercial	PACIFIC MIDWEST DEV	All Planning Approvals	NO	4 Commerical buildings	3,000	0	0	0	0	3,000	0	0				0	795	0.89
PROJ-5810 [5]	Institutional	VENTURA BOTANICAL GARDENS	Under Construction	YES	Botanical Gardens and support facilities within Grant Park	-	-	-	-	-	-	-	-	-	-	-	-	-	134.05
PROJ-6984[2] (was PROJ-00823)	Mixed Use	MAR-Y-CEL	All Planning Approvals	YES	Mixed Use: 140 Units & 6,142 sf commerical	6,142	0	0	0	0	6,142	0	0			140	140	36,628	41.02
PROJ-7166	Mixed Use	DARLING APARTMENTS	Under Construction	NO	Mixed Use: 43 Apartments & 2 Live/Work Units &2100 sf Commerical/Retail	2,100	0	0	0	0	2,100	0	0			45	45	11,807	13.22

Table 2-4
Summary of Approved and Under Construction Projects - as of December 2017

						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)	Park / Irrig. Area (ac)	Single-Family (Units)	Multi-Family (Units)	Total (Units)	Total Daily Demand (GPD)	Total Annual Demand (AFY)
PROJ-7951[9]	Residential	WESTVIEW VILLAGE -Housing Authority	Under Construction	YES	Redevelopment of 180 public housing apartments and the addition of 140 new apartments	0	0	0	0	0	0	0	0			140	140	35,000	39.20
PROJ-5085	Residential	VENTURA DOWNTOWN HOUSING	All Planning Approvals	YES	255 Apartments	0	0	0	0	0	0	0	0			255	255	63,750	71.40
PROJ-7224	Residential	SANJON VILLAGE - 1230 E THOMPSON BL	All Planning Approvals	YES	34 Condiminium Units	0	0	0	0	0	0	0	0			34	34	8,500	9.52
PROJ-10278	Commercial	SUBARU DEALERSHIP	Under Construction	NO	Addition of a 1,500 SF service bay and 1238 SF wash bay to existing Subaru dealership	2,783	0	0	0	0	2,783	0	0				0	737	0.83
PROJ-7630	Commercial	HOLIDAY INN EXPRESS & SUITES HOTEL - 1080 NAVIGATOR WAY	Under Construction	NO	40 Room addition to existing Holiday Inn Express & Suites	0	23961	0	0	0	23,961	0	0				0	6,350	7.11
PROJ-8479[1]	Commercial	KAISER - NWC MARKET & VALENTINE	Under Construction	NO	72,000 SF Medical Center	72,000	0	0		0	72,000	0	0				0	19,080	21.37
PROJ-10172	Commercial	VENTURA OPTHALMOLOGY	Under Construction	NO	2-Story, 11,208 SF medical office building	11,208	0	0	0	0	11,208	0	0				0	2,970	3.33
PROJ-8096	Industrial	VICTORIA CORPORATE	Under Construction	NO	43,470 SF, one-story industrial office building	0	0	0	43,470	0	43,470	0	0				0	11,520	12.90
PROJ-8647[8]	Commerical	GOLF COURSE SELF STORAGE	All Planning Approvals	NO	New self stoarge facility	914	0	0	0	0	914	0	0				0	242	0.27
PROJ-4677	Residential	WESTSIDE RENAISSANCE	All Planning Approvals	YES	50 Affordable senior apartments	0	0	0	0	0	0	0	0			50	50	12,500	14.00
PROJ-10410	Residential	RANCHO VERDE	All Planning Approvals	NO	24 Farmworker housing apartment units	0	0	0	0	0	0	0	0			24	24	6,000	6.72
PROJ-9523[9]	Residential	RIVERSIDE ST MULTI-FAMILY	Under Construction	YES	New multi-family: 6 buildings, 23 units,100% affordable	0	0	0	0	0	0	0	0			23	23	5,750	6.44
PROJ-10256 [3] (was PROJ-04182)	Mixed Use	DEANZA COURTS_1995 N. VENTURA AVE (Previously New Urban Ventures)	All Planning Approvals	YES	Modification of an approved project- 80 residential units and 1,779 SF of retail within three buildings.	1,779	0	0	0	0	1,779	0	0			80	80	20,471	22.93
PROJ-6270[6]	Residential	NORTHBANK - VINCE DALY	All Planning Approvals	NO	117 Single family; 31 affordable for sale triplex/quadplex; 50 apartments	0	0	0	0	0	0	0	0		117	81	198	63,540	71.17
PROJ-10910	Commercial	VICTORIA & MOON RETAIL CENTER	All Planning Approvals	NO	Demolition of existing structures (approx. 9,100 SF) and development of 1,840 SF coffee café and 6,500 SF building pad	8,340	0	0	0	0	8,340	0	0		0	0	0	2,210	2.48
PROJ-10066	Commercial	RIVIERA SHOPPING CENTER	All Planning Approvals	NO	New 6,000 SF expansion, creation of two new pad buildings of 5,510 SF and 1,827 SF respectively	13,337	0	0	0	0	13,337	0	0		0	0	0	3,534	3.96
PROJ-10785	Commercial	5811 OLIVAS PARK DR	All Planning Approvals	NO	New 23,501 SF industrial/commercial building	23,501	0	0	0	0	23,501	0	0		0	0	0	6,228	6.98
PROJ-8428	Mixed Use	11101 CARLOS ST - GISLER RANCH MIXED USE	All Planning Approvals	NO	3-story mixed use consisting of 43 apartments &1,200 SF retail	1,200	0	0	0	0	1,200	0	0		0	43	43	11,068	12.40
PROJ-6018	Mixed Use	WORLD OIL - 1571 E. MAIN ST	All Planning Approvals	YES	3 apartment units & 2,438 SF commercial	2,438	0	0	0	0	2,438	0	0		0	3	3	1,396	1.56
PROJ-8427	Residential	11156-11172 CITRUS DR. - CITRUS II	All Planning Approvals	NO	78 unit, 3-story apartment building	0	0	0	0	0	0	0	0		0	78	78	19,500	21.84
TOTAL						**207,587**	**111,516**	**158,984**	**363,470**	**6,400**	**847,957**	**230**	**125**	**7.51**	**695**	**2,316**	**3,011**	**1,116,429**	**1,384**
					Total within Casitas Boundary	28,682	555	0	320,000	0	349,237	230	0	2.6	154	1,072	1,226	463,178	653
					Total not in Casitas Boundary	178,905	110,961	158,984	43,470	6,400	498,720	0	125	5.0	541	1,244	1,785	653,251	732

[1] Not part of CY 2017 water consumption (connected to City water, no established water usage).

[2] Approved and/or revised projects during CY 2017 per Community Development Planning Projects List dated February 9, 2018.

[3] Projects previously approved and/or revised.

[4] PROJ-03826 was the affordable component of the project and consisted of 24 farmworker apartments. It is now moving forward as PROJ-10410.

[5] Total Annual Demand Value as reported in the memo Water System Alternatives Evaluation, Water System Hydraulic Evaluation, and Supply Discussion for the Ventura Botanical Gardens in the City of Ventura, dated November 2014

[6] Project entitled through City and pending annexation by LAFCo

[7] Project includes 15 new condiminiums and conversion of existing commercial space to 18 unit Boutique B&B

[8] Projected demand based only on square footage of office component of project, not each individual storage unit.

[9] Projects that are within Casitas MWD boundary and currently under construction and anticipated to be completed in FY 2018-2019, with the exclusion of the Ventura Botanical Gardens.

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

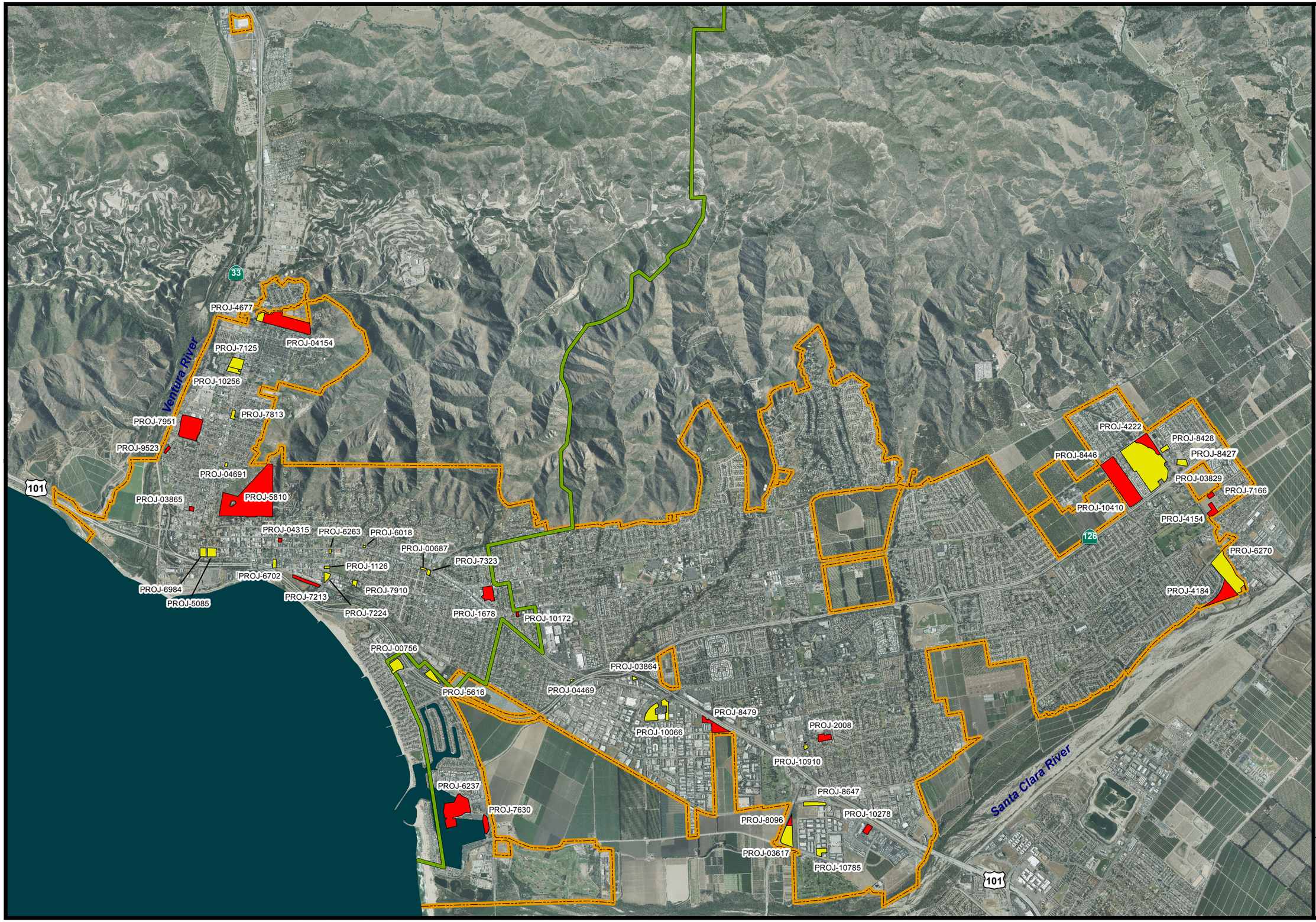
	Residential Development (units)	Non-Residential				
		Retail (sf)	Office (sf)	Industrial (sf)	Hotel (sf)	Total (sf)
2005 General Plan Prediction [1]	8,318	1,241,377	1,213,214	2,235,133	530,000	5,219,724
Actual Development (Built 2005-2012) [2]	1,912	320,102	320,102	754,239	0	1,394,442
Constructed (Built 2013) [4]	28	4,356	0	0	0	4,356
Constructed (Built 2014) [4]	0	0	147,060	0	0	147,060
Constructed (Built 2015) [4]	173	0	0	0	0	0
Constructed (Built 2016) [4]	40	0	7,360	0	0	7,360
Constructed (Built 2017) [4]	162	28,238	0	0	1,399	29,637
Remaining Developable Land (as of end 2017)	***6,003***	***888,682***	***738,693***	***1,480,894***	***528,601***	***3,636,869***
Approved & Under Construction Projects [3]	3,011	207,587	6,400	523,853	111,516	849,356
Remaining Developable Land (through 2025)	**2,992**	**681,095**	**732,293**	**957,041**	**417,085**	**2,787,513**

[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.

[4] Per Table 2-3.



VENTURA WATER

VENTURA WATER

Projects Approved and Under Construction (as of December 2017)

Legend

- Casitas Municipal Water District Boundary
- Ventura City Limit

Project Status

- All Planning Approvals
- Under Construction

Note: See Table 2-4 for project and water demand information for each project shown on this exhibit.

N

0 0.5 1 Miles

Exhibit 2-2

4/10/2018 DB W:\E-Atlas\Map_Projects\Water_Projects_Approved\Water_Projects_Approved_2017

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

3. WATER DEMANDS

A. EXISTING DEMAND CONDITION

Ventura Water staff provided a summary of the meter consumption data for the entire service area for the calendar years (CY) 2008 - 2017 (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 2017. As shown in Table 3-1, the total water consumption for CY 2017 was 13,973 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 2017

City Consumption Category	Water Consumption (HCF) [1]	Water Consumption (gpm)	Water Consumption (gpd)	Water Consumption (AFY)	Water Consumption + 6.5% Loss (AFY)
Single Family	2,279,981	3,244.72	4,672,399	5,234	5,574
Multi Family	1,399,116	1,991.13	2,867,230	3,212	3,421
Commercial/Retail/ Industrial/Hotel	1,236,219	1,759.31	2,533,402	2,838	3,022
Public/Institutional (Municipal/Church/ School)	185,300	263.71	379,738	425	453
Hospitals	61,998	88.23	127,053	142	152
Parks/Landscape/ Irrigation	385,869	549.14	790,767	886	943
Other [2]	166,564	237.04	341,342	382	407
Total	**5,715,047**	**8,133.29**	**11,711,932**	**13,120**	**13,973**

[1] Source: HCF Consumption Data Tables (CY 2017)
[2] "Other" category includes authorized consumption for miscellaneous uses that do not fit the definitions of the above consumption categories (i.e. oil industry use). .

B. CONSUMPTION AND USAGE FACTORS

Future water demands are calculated using available land use data and corresponding water demand factors. Prior to the 2013 CWRR, the City had been utilizing the water demand factors identified in the 2005 General Plan FEIR to calculate future water demands. However, City staff recognized 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, which is consistent with industry standards/practices. 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.

It should be noted that the water demand factors in Table 3-3 will not be updated on an annual basis. The water demand factors will be re-visited every ten (10) years, unless there is a significant change in the year-over-year annual demand (quantified as a 30% change in two-year period).

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 per the 2013 CWRR were compared with other southern California water agencies with similar characteristics – population, climate, water supply sources. These included local agencies such as the City of 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 in 2013 were 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. Table 3-5 provides a summary of the City-wide water consumption for each year from 2008 to 2017. The consumption numbers are also depicted graphically on Figure 3-1.

As noted in the table, the average annual water consumption for Years 2008-2012 (17,601 AFY) was significantly higher than the average annual consumption for Years 2013-2017 (15,429 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, and less construction activity. 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. Due to the prolonged drought, in February 2014 the City requested its customers to voluntarily reduce their water usage by at least 10%, and in September 2014 the City implemented a 20% mandatory reduction.

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 2008 (19,014 AFY) to the low year of 2011 (16,550 AFY). The City experienced another decline in water consumption with a high in 2012 (18,004 AF) to a low year in 2017 (13,973 AF).

Per Table 3-5, over the most recent 5-year period (2013 to 2017), the average annual water consumption was 15,429 AFY, with the lowest year approximately 9.4% lower than the average and the highest year approximately 14.9% above the average. Over the 10-year period (2008 to 2017), the average annual water consumption was 16,515 AFY, with the lowest year approximately 15.4% lower than the average and the highest year approximately 15.1% above the average.

For the purposes of establishing a baseline average annual water demand for the existing condition, the 10-year average from the preceding ten years of water consumption data is used. Therefore, the baseline water demand established for this report is the 10-year average (2008 to 2017) of 16,515 AFY.

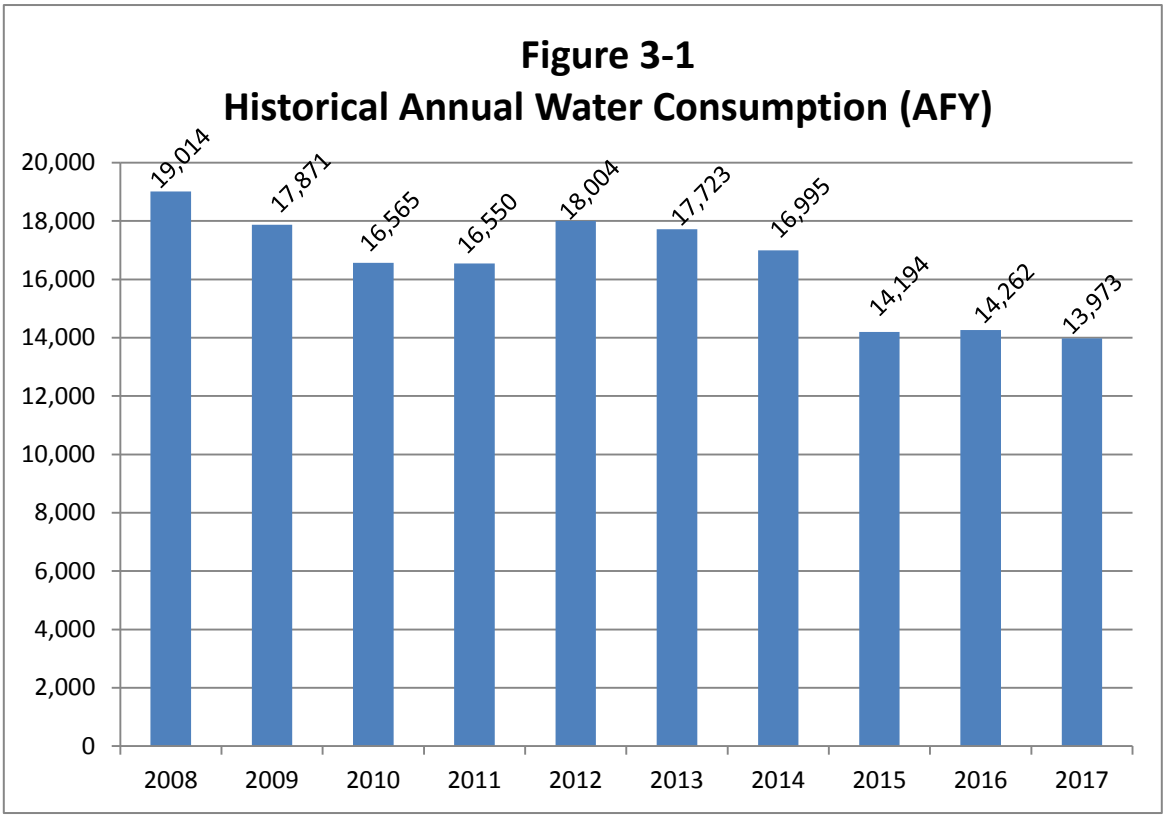
Table 3-5
Historical Annual Water Consumption

Calendar Year	Consumption [1] (AF)	Averages, AFY[2] 3-year	5-year	10-year
2008	19,014			
2009	17,871			
2010	16,565		17,601	
2011	16,550			
2012	18,004			
2013	17,723			16,515
2014	16,995			
2015	14,194		15,429	
2016	14,262	14,143		
2017	13,973			

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

[2] Staff intends to use the 10-year average for baseline demand unless changed circumstances arise. The 3-year and 5-year averages are provided for informational purposes, and are not used in the demand calculation.

Figure 3-1
Historical Annual Water Consumption (AFY)



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 2017, 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 1,384 acre-feet/year (AFY). Table 3-6 also identifies the portion of the near-term demands, 653 AFY, that are predicted to be within the service area of the Casitas Municipal Water District.

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 17,899 AFY, as shown on Table 3-7.

In order to estimate the growth of the future water demands, an 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's Community Development Department, an estimated annual growth of 350 units/year is considered conservative and reasonable. 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 2026, per Table 3-8.

F. FUTURE DEMAND PROJECTS (Year 2030)

The 2018 CWRR projects out the demands to the Year 2030 which is beyond the year that the approved projects would be fully vested. In order to project out the estimated demands to the year 2030, a growth rate of 0.55% (Department of Finance historical data for population) was used to estimate the increase in demand from the time all approved projects were fully vested (year 2026) to the Year 2030. The City's Community Development Department confirmed this growth rate figure is reasonable.

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

Water Demand Factor Classification	Quantity [1]		Usage Factor [2]		Estimated Future Water Demand				Quantity [4]		Estimated Average Water Demand (within Casitas Boundary)			
Residential (0-8 du/ac)	695	du	370	gpd/du	257,150	gpd	288	AFY	154	du	56,980	gpd	64	AFY
Residential (9-20 du/ac)	2,316	du	250	gpd/du	579,000	gpd	649	AFY	1,072	du	268,000	gpd	300	AFY
Residential (21+ du/ac)														
Commercial/Retail/Industrial/Hotel Public/Institutional	527	ksf [3]	265	gpd/ksf	139,655	gpd	156	AFY	29.2	ksf [3]	7,748	gpd	9	AFY
Park/Landscape/Irrigation	7.5	ac	2,000	gpd/ac	15,020	gpd	17	AFY	2.6	ac	5,200	gpd	6	AFY
Hospital/Assisted Living	230	bed	545	gpd/bed	125,350	gpd	140	AFY	230	bed	125,350	gpd	140	AFY
PROJ-5810 Ventura Botanical Gardens [4][5]	-		-		-		134	AFY	-		-		134	AFY
Total					***1,116,175***	***gpd***	***1,384***	***AFY***			***463,278***	***gpd***	***653***	***AFY***

[1] Per Table 2-4

[2] Per Table 3-3

[3] Excludes 320,000 square feet (SF) for the Hospital PROJ-1678. 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).

[5] Total Annual Demand Value as reported in the memo Water System Alternatives Evaluation, Water System Hydraulic Evaluation, and Supply Discussion for the Ventura Botanical Gardens in the City of Ventura,
dated November 2014

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]
		1,384 AFY
1-Year: 2017	13,973 AFY	15,357 AFY
3-Year Average: 2015-2017	14,143	15,527
5-Year Average: 2013-2017	15,429	16,813
10-Year Average: 2008-2017	**16,515**	**17,899**
Past 5-Year Period: Annual High Year	17,723	19,107
Past 10-Year Period: Annual High Year	19,014	20,398

[1] Based on Calculated Consumption (Usage) Factors, see Table 2-4
Note: The previous CWRR's (2013 to 2016) utilized a 5-year average baseline water demand. The 2017 and 2018 CWRRs utilize a 10-year average baseline water demand.

Table 3-8
Projected Water Demand Growth per Absorption Rate

Year	Total Units [1]	Absorption Rate [2]	Projected Water Demand [3]
2017			***16,515 AFY***
2018		350	16,676
2019		350	16,837
2020		350	16,998
2021		350	17,159
2022		350	17,320
2023		350	17,480
2024		350	17,641
2025		350	17,802
2026		211	17,899
Totals	**3,011**	**3,011**	**17,899 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 dwelling unit (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 existing facilities to get the water directly into the City's distribution system. 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 existing six water supply sources and associated supply conditions are discussed in the following sections:

- Normal (non-drought) water supply sources – The City's water supply in a normal (non-drought) year. The City's normal water supply portfolio is summarized in Table 4-1.
- Current water supply sources - The City's water supply under existing conditions (normal, drought, or other emergency conditions) in the current calendar year. The City's current water supply portfolio is summarized in Table 4-2.
- Projected future water supply sources – The City's projected water supply through 2030 evaluating both normal and drought conditions. The City's projected future water supply is summarized in Table 4-3.

It should be noted that the previous CWRRs referenced two tables (former Table 4-1 "Summary of Normal Water Supply" and former Table 4-2 "Summary of Projected Future Water Supply from Existing and Potential New Sources"). The following sections have been revised from previous CWRRs to include a new section and a new table so that the differences in normal, current, and projected future supply sources are better reflected. In addition, in March 2017 the City Council recommended that the CWRR includes an extended "worst-case scenario" drought assessment. Thus, Table 4-3 (projected water supply) includes a multi-year drought.

Please refer to Figure 4- 1 for the locations and boundaries of the City's supply sources.

CITY OF
SAN BUENAVENTURA

Supply Sources

Lake Casitas

CASITAS MUNICIPAL WATER DISTRICT

Foster Park

Avenue Treatment Plant

UNITED WATER CONSERVATION DISTRICT

Santa Paula Groundwater Basin

Saticoy Conditioning Facility

Bailey Conditioning Facility

Mound Groundwater Basin

West Las Posas Groundwater Basin

Oxnard Forebay Groundwater Basin

Oxnard Plain Groundwater Basin

Oxnard Plain Groundwater Basin

Pacific Ocean

Ventura River

Santa Clara River

33

101

126

101

Legend

- City of Ventura Treatment Plant or Conditioning Facility
- Groundwater Basins
- Regional Water District Boundaries

0 0.5 1 Miles

Source: Eagle Aerial, Dec 2007

RBF CONSULTING GIS

Figure 4-1

M:\Mdata\10104392\EXV_1_SupplySources_L11x17.mxd 3/7/2011-- DR

B. NORMAL (NON-DROUGHT) WATER SUPPLY SOURCES

For the purposes of this report, a normal (non-drought) year is defined by the March 2015 Water Shortage Event Contingency Plan (2015 WSECP – see Section 5 of this report for further discussion). When the stages of the 2015 WSECP are not activated, the City is experiencing normal conditions. If any stages are activated, the City is considered to be in a water shortage event. The background for the normal (non-drought) water supply portfolio for each source is discussed below and summarized in Table 4-1.

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. Historically, the City has purchased a third of its water supply from Casitas during "normal" or "non-drought" years. Ventura River diversions and storm water runoff from local watersheds are 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.

The City's 1995 water purchase agreement with Casitas required a minimum annual purchase of 6,000 AFY, which was subject to Casitas' allocation program during drought periods. In May 2017, the City Council approved a new Water Services Agreement between the City and Casitas that establishes that Casitas shall supply the City with sufficient water to meet its in-district projected water demand. The following items summarize major changes and/or new provisions in the Agreement:

- Casitas shall supply the City with sufficient water to meet its Projected Water Demand.
- The City shall submit a Projected Water Demand to Casitas by the last business day of May of every year.
    - The Projected Water Demand is the total amount of water needed to meet the City's water needs within Casitas boundaries and shall include any adjustments on demand associated with land use.
- In the event that Casitas must enact its Water Efficiency and Allocation Program (WEAP) due to a water shortage, Casitas may adjust the City's Allocation consistent with the percentage reduction for the WEAP stage.
- The City's Stage 1 Allocation shall be the average of the City's Projected Water Demand during the five (5) most recent years during which neither the City nor Casitas are implementing their water shortage contingency plans.

- The City shall annually certify no later than the last business day of August whether it achieved Water Balance. The certification shall identify Purchased Water, Actual In-District Demand, and Water Loss.
- The City achieves Water Balance when the below calculation equals a negative number or zero.
- Water Balance = Purchased Water – Actual In-District Demand
- Actual In-District Demand: The water purchased and utilized by the City within Casitas boundaries as certified by the City on an annual basis.
    - Actual In-District Demand = (City Metered Water within Casitas Boundaries) + (Water Loss x Purchased Water)
- Water Loss shall be determined based on the following calculation:
    - Water Loss = (Citywide Water Production – Citywide Metered Sales)/Citywide Water Production
    - The Water Loss calculation will be made each year by the City and may be revised to meet State-prescribed definitions and/or standards.

In order to estimate the normal year supply from Casitas the following assumptions were made:

The amount of City metered water within the Casitas boundaries and purchased water was taken from the past five non-drought fiscal years (FY 09-10 to FY 13-14) certification letters from the City to Casitas. Fiscal Year 09-10 through Fiscal Year 13-14 were considered non-drought years.

The percent used for water loss calculations is 6.5 percent based on the City's 2010 Urban Water Management Plan. Therefore, the five year average normal (non-drought) water supply from Casitas is estimated to be 5,062 AFY.

To calculate the current (2018) normal water supply from Casitas, the demand from the proposed development projects that are anticipated to be utilizing water by Fiscal Year 2018 are added to the five year average normal (non-drought) water supply from Casitas of 5,062 AFY. Projects listed in Table 2-4 as within the Casitas service area boundary with the status of under construction are assumed to be utilizing water in Fiscal Year 2018. The normal water supply from Casitas is estimated to be 5,340 AFY and is reflected in Table 4-1.

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

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, the storage capacity of the Ventura River alluvium, and

upstream diversions. Currently, the surface intake structure is unused due to 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.

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 or replaced.

In conjunction with the Matilija Dam Ecosystem Restoration Project, two additional wells, No. 12 and 13, were installed at Foster Park as part of the dam removal mitigation measures. It should be noted these mitigation wells are currently not operational. The mitigation wells were funded by and constructed through a grant received by the Ventura County Watershed Protection District for the City in order to mitigate for water that is expected to be lost as a result of increases in turbidity due to the Matilija Dam removal process. Though these wells have been drilled, they are not connected to the wellfield infrastructure and have not been permitted by the California Department of Public Health as a raw water source for the City's Avenue Water Treatment Plant.

The City's historical production based on the 50-year average production from 1960-2000 was 6,015 AFY. 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. Therefore the City's normal water supply from the Ventura River / Foster Park is 4,200 AFY. Potential reductions to this supply number by proposed regulatory and environmental constraints are discussed in Section 4D.

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 City's average annual extraction from 2000 to 2009 was approximately 4,000 AFY.

Currently, two City 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. The City is currently drafting an agreement between the City and the County on deeding to the County its interest in Victoria Well #1 and acquiring land for drilling of Mound Well #2.

Therefore the City's normal water supply from the Mound Basin is 4,000 AFY.

4. Oxnard Plain Groundwater Basin (Fox Canyon Aquifer)

Wells near the Buenaventura Golf Course pump from the Fox Canyon Aquifer of the Oxnard Plain Groundwater Basin. Currently, three wells, Golf Course Wells No. 5, 6, and 7 produce potable water for the City's system.

The Fox Canyon Groundwater Management Agency (FCGMA) 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 FCGMA 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 FCGMA 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 normal (pre FCGMA Emergency Ordinance E) 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, under certain circumstances and conditions described in the stipulated judgment, the City may be able to pump an additional 3,000 AFY in case of an emergency, such as a fire, flood, earthquake, or resulting from a long-term drought situation.

Construction of Saticoy Well No. 3 was completed in 2015 and Saticoy Well No. 2 remains active as a back-up well. Prior to 2014, the City acquired 5.8 acre-feet of water rights in the Santa Paula Basin from the past development of Tract 4632. In 2016, the City acquired 35.1 acre-feet of water rights in the Santa Paula Basin from the development of Tracts 5632 and Tract 5774 (see Table 4-1). Therefore, the City's normal water supply from the Santa Paula Basin is 3,041 AFY.

6. Recycled Water

The City collects and treats wastewater at its Ventura Water Reclamation Facility (VWRF). The reclamation facility capacity is currently permitted for 14MGD; however, the secondary treatment limits the plant capacity to 12 MGD. The reclamation facility is permitted to discharge an annual average of up to 9 MGD. The VWRF discharges less than this during drought conditions. A portion of the tertiary treated effluent is pumped to recycled water customers and the remaining tertiary treated 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.

With continuing drought conditions and shortages in water supply, the City sought to expand the use of recycled water. There was limited use under the City's current permit originally issued in 1987 by the Los Angeles Regional Water Quality Control Board (LARWQCB) for water reclamation. Therefore, the City was directed by the LARWQCB and the State Water Resources Control Board (SWRCB) to submit a Change Petition to add dust control and residential irrigation use as permitted uses as well as account for reduced discharges of treated wastewater to the Santa Clara River Estuary. The City filed a Wastewater Change Petition with the SWRCB Division of Water Rights on April 17, 2015.

A mobile Reuse Program was created and submitted to the LARWQCB and the SWRCB Division of Drinking Water for approval on August 19, 2015. The City was given permission by LARWQCB to begin hauling recycled water from the VWRF to use on City trees, but not for use by residents and the other designated non-residential customers until the Change Petition and CEQA process was completed. Approval for the Wastewater Change Petition WW0083 was given on May 6, 2016. It increased the amount of available recycled water use from 0.67 MGD to 2.0 MGD. The approved uses for recycled water were for landscape irrigation and dust control at

locations specified in the petition and CEQA Initial Study and Negative Declaration document. From June to December 2016, a total of approximately 8 acre-feet of recycled water was served from the Recycled Water Fill Station. In CY 2017, approximately 16.41 acre-feet of recycled water was served. The demand from the Mobile Reuse Program is not included in Table 4-1.

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

Table 4-1

Summary of Normal Water Supply 2018*

Water Supply Source	**Normal Supply AFY**
Casitas Municipal Water District [1]	5,340
Ventura River / Foster Park	4,200
Mound Groundwater Basin	4,000
Oxnard Plain Groundwater Basin	4,100
Santa Paula Groundwater Basin [2] City Acquired Water Rights[3]	3,000 40.9
Recycled Water	700
TOTAL	**21,381 AF**

[1] Demand within Casitas service area is based on the 2017 Agreement. The five year average normal (non-drought) water supply from Casitas is estimated to be 5,062 AFY. Adding in development under construction (estimated to be 278 AFY) brings the total normal year supply to 5,340 AFY.
[2] Includes 3,000 AF of original City allocation and
[3] 5.8 AF of water rights acquired for the past development of Tract 4632, 12.0 AF of water rights acquired for the development of Phase 1 of Tract 5632 in 2016 and 23.1 AF of water rights acquired for the development of Tract 5774 in 2016.

*Table 4-1 per the 2015 WSECP was previously identified as Summary of Current Water Supply.

C. CURRENT WATER SUPPLY SOURCES (2018)

As of April 2018, the City is currently in its seventh year of drought. On March 9, 2015, the City Council approved the Water Shortage Event Contingency Plan. The Water Shortage Event Contingency Plan (2015 WSECP) includes stages of action to respond to water shortage events. The City developed a six-stage contingency plan to reduce demand up to 60% during a severe or extended water shortage event including both voluntary and mandatory stages. In September 2014, the City Council declared that Ventura was in a Stage 3 Water Shortage Emergency calling for 20% mandatory conservation cutback. The Stage 3 trigger indicates that annual supply projection is between 20% and 29% below normal year supply projection. The annual supply projection is from Table 4-3 of the most recent CWRR and the normal year supply is identified from Table 4-1 of the 2013 CWRR. The WSECP noted that the baseline supply value will not change through the duration of the event. The City has remained in the current drought since 2014, so Table 4-1 of the 2013 CWRR is utilized for the baseline supply value.

The annual supply projection from Table 4-3 of this report for 2018 supply drought impact is 15,321 AFY. The normal year supply projection from Table 4-1 of the 2013 CWRR is 19,600 AFY. Therefore, the annual supply projection is 21.83% below normal year supply and the City remains in a Stage 3 Water Shortage Emergency. The current water supply sources under existing conditions in calendar year 2018 will be evaluated for drought impact. The background for the current water supply portfolio for each source is discussed below and summarized in Table 4-2.

1. Casitas Municipal Water District (Casitas)

As mentioned in the Normal Water Supply section, a Water Services Agreement between the City and Casitas was finalized and approved by City Council in May 2017. The agreement indicates that in the event that Casitas must enact its Water Efficiency and Allocation Program (2015 WEAP) due to a water shortage, Casitas may adjust the City's allocation consistent with the percentage reduction for the WEAP stage.

Casitas has assigned five stages of water storage in Lake Casitas that serve as a guidance to triggering the implementation of water use reduction goals and measures.

Stage	Stage Title	Lake Casitas Storage (%)	Demand Reduction
1	Water Conservation	100% to 50%	0%
2	Water Shortage Warning	50% to 40%	20%
3	Water Shortage Eminent	40% to 30%	30%
4	Severe Water Shortage	30% to 25%	40%
5	Critical Water Shortage	25% to 0%	50%

The Casitas General Manager shall report to the Casitas Board of Directors each year with an assessment of the current water storage in Lake Casitas and local groundwater basins, current water use trends, predicted weather conditions, and an evaluation of current water use reduction goals. The report may be delivered in April or as Lake Casitas storage reaches a change in Stage action level. The Casitas Board of Directors may declare that a Stage condition of water supply in Lake Casitas exists and implement the appropriate demand reduction goals and measures in response to current and/or predicted water availability conditions.

As of April 2018, Casitas is currently in a Stage 3 water supply condition per Casitas Resolution No. 16-00. However, Casitas is re-evaluating its water supply condition and the General Manager of Casitas will present an update to the Casitas Board of Directors in the Spring/Summer of 2018.. Draft minutes from the Casitas Water Resources Committee Meeting of March 27, 2018 indicate that by "…October 2018…Lake Casitas is likely to decrease in storage to the initiation of a Stage 4 condition". In order to be conservative, the 2018 CWRR assumes a reduction of 40% to the City's Casitas supply consistent with the Stage 4 mandates.

The Water Services Agreement between Casitas and the City specifies that the City's Stage 1 Allocation shall be the average of the City's Projected Water Demand during the five (5) most recent years during which neither the City nor Casitas are implementing their water shortage contingency plans. The projected water demand from the past five non-drought fiscal years (FY 09-10 to FY 13-14) certification letters from the City to Casitas including demand associated with land use change is 5,340 AFY. A Stage 4 demand reduction of 40% would result in a supply of 3,204 AFY.

Therefore, the City's current water supply from Casitas is 3,204 AFY for calendar year 2018.

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

Due to continued drought conditions and heightened environmental requirements, the City's ability to draw water from the Ventura River continues to be significantly challenged and impacted. To determine the City's current water supply with the existing drought conditions, the five-year production average from 2013 to 2017 was selected. This date range was selected since it reflects current drought conditions. Therefore, the City's current water supply from Ventura River / Foster Park is 2,384 AFY for calendar year 2018.

3. Mound Groundwater Basin (Mound Basin)

Due to continued drought conditions and operational constraints, production from the Mound Basin has been lower than the historical 10-year average discussed in the Normal Water Supply section. To determine the City's current water supply with the existing drought conditions, the

three year production average from 2015 to 2017 was selected. This date range was selected since it reflects drought conditions as well as recent operational constraints due to the current condition of the City's existing wells in this basin.

Therefore, the City's current water supply from the Mound Basin is 2,130 AFY for calendar year 2018.

4. Oxnard Plain Groundwater Basin (Fox Canyon Aquifer)

After several special meetings in the first few months of 2014 and several iterations of an emergency ordinance, the Fox Canyon Groundwater Management Agency (FCGMA) Board approved Emergency Ordinance E at a Special Meeting on April 11, 2014. The emergency ordinance limits extractions from groundwater extraction facilities within the FCGMA boundary, suspends use of credits and prohibits the construction of any groundwater extraction facilities and/or the issuance of any groundwater extraction facilities permit.

For all Municipal and Industrial (M&I) Operators the Temporary Extraction Allocation (TEA) is based on an operators average annual reported extractions, for CY 2003 through 2012. Phased reductions were set beginning July 1, 2014 with a 20% total reduction of the TEA on January 1, 2016. The City's TEA is 4,827 AFY and with the phased reductions has been 3,862 AFY since January 1, 2016. This equates to a reduction of approximately 29% from the previous historical baseline allocation of 5,472 AFY. The City's allocation has been limited to 3,862 AFY.

The City may pay surcharges for exceeding its allocation because the City may not rely on its conservation credits that were set aside during wet years. Prior to approval of Ordinance E, the City was relying on approximately 25,000 AF of conservation credits that have now been suspended. On June 14, 2014, the City requested a variance to our allocation per Ordinance E and was denied by FCGMA staff. The City then made an appeal to the FCGMA Board on January 28, 2015, and was denied by the FCGMA Board.

Key points presented by FCGMA for Emergency Ordinance E were as follows:

- The FCGMA Act goal of safe yield by 2010 not being met,
- The 2007 Groundwater Management Plan Basin Management Objectives not being met,
- Water level declines in all basins,
- The unsustainability of the current Agency allocation scheme,
- Increase in time of planted acres of water intensive crops, and
- The continued unabated threats to the resource (seawater intrusion, water quality degradation, land subsidence).

The duration of the ordinance remains in effect from the date of adoption and reviewed every eighteen months, unless superseded or rescinded by action of the FCGMA Board or a finding by the FCGMA Board that the drought or emergency condition no longer exists. Therefore, the City's current water supply from the Oxnard Plain is 3,862 AFY for calendar year 2018.

5. Santa Paula Groundwater Basin (Santa Paula Basin)

As discussed in the Normal Water Supply section above, the Santa Paula Basin Judgment allows the City to utilize 3,000 AFY. No reductions to this supply is anticipated for this year; therefore, the City's current water supply from the Santa Paula Basin is 3,041 AFY (includes City acquired water rights) for calendar year 2018.

6. Recycled Water

As stated in the 2015 Urban Water Management Plan, the City's average annual recycled water demand is approximately 700 AFY. Therefore, the City's current recycled water demand is 700 AFY for calendar year 2018.

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

Table 4-2

Summary of Current Water Supply 2018

(Drought)

Water Supply Source	**Current Supply 2018 AFY**
Casitas Municipal Water District [1]	3,204
Ventura River / Foster Park	2,384
Mound Groundwater Basin	2,130
Oxnard Plain Groundwater Basin	3,862
Santa Paula Groundwater Basin [2] City Acquired Water Rights[3]	3,000 40.9
Recycled Water	700
TOTAL	**15,321 AF**

[1] Demand within Casitas service area is based on the 2017 Agreement and assumes a Stage 4 demand reduction.
[2] Includes 3,000 AF of original City allocation and
[3] 5.8 AF of water rights acquired for the past development of Tract 4632, 12.0 AF of water rights acquired for the development of Phase 1 of Tract 5632 in 2016 and 23.1 AF of water rights acquired for the development of Tract 5774 in 2016.

D. PROJECTED FUTURE WATER SUPPLY

The City's projected future water supply sources is evaluated through 2030 and assesses the current drought and forecasts an additional two years of drought through 2020 (for a total duration of a nine year drought). The projected future water supply also assumes that the City will revert to normal conditions in 2025 through 2030. The background for the City's projected future water supply portfolio for each source is discussed below and summarized in Table 4-3.

The City's projected future water supply will be impacted by the Sustainable Groundwater Management Act (SGMA). In September 2014, the State legislature passed the SGMA to improve management of groundwater resources in California. Groundwater Sustainability Agencies (GSAs) must be formed for regions where groundwater basins are designated medium or high priority by the Department of Water Resources (DWR). Medium or high priority ranking groundwater basins are at risk of overdraft and/or a decline in water quality. The intent of the legislation is to manage groundwater sustainably; to require reporting related to hydrogeological conditions, water balance trends, sustainable yield and beneficial uses; to prevent the deterioration of water quality and environmental damage and irreversible land subsidence; and to increase groundwater recharge and storage; amongst additional guidelines. SGMA also provides the GSA with a range of authorities including but not limited to adopting rules, regulations, ordinances, and resolutions to implement SGMA; monitoring compliance and enforcement; requiring registration of groundwater extraction wells; investigating, appropriating, and acquiring surface water rights, groundwater, and groundwater rights into the GSA; acquiring or augmenting local water supplies to enhance the sustainability of the groundwater basin; and adopting and funding a Groundwater Sustainability Plan (GSP).

GSAs have been formed for the Upper Ventura River and Mound Basins. The Fox Canyon Groundwater Management Agency (FCGMA) was named as the GSA for the Oxnard Plain Basin (designated as high-priority) and the City is participating in the development of the GSP for the Oxnard Plain Basin. The Santa Paula Basin is managed under a stipulated judgement, and is currently only subject to annual reporting requirements to DWR under SGMA. The SGMA's impact on the City's water supply sources is further discussed in the respective sections below.

1. Casitas Municipal Water District (Casitas)

As mentioned in the Normal Water Supply section, a Water Services Agreement between the City and Casitas was finalized and approved by City Council in May 2017. The agreement indicates that in the event that Casitas must enact its Water Efficiency and Allocation Program (WEAP) due to a water shortage, Casitas may adjust the City's allocation consistent with the percentage reduction for the WEAP stage.

As discussed in Section 3, and shown on Table 3-6, 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 653 AFY. Therefore, the anticipated future water supply from Casitas will increase by an equivalent amount, to approximately 5,375 AFY by Year 2020. Using the absorption rate discussed in Section 3, the estimated supply from Casitas is estimated to increase by 278 AFY in year 2018. However, this supply increase is subject to a percentage reduction consistent with the WEAP stage if Casitas has declared a water shortage.

Casitas has been stating that Lake Casitas is at risk due to persistent drought conditions and depletion of the Lake Casitas water supply to minimum pool. In March 2017, the storage in Lake Casitas was at 43.9% of capacity. As of April 18, 2018, Lake Casitas was at 35.5% capacity.

Casitas is currently in a Stage 3 water supply condition per Casitas Resolution No. 16-09. However, Casitas will reevaluate its water status and propose a water shortage condition. It is anticipated that Casitas may declare a Stage 4 water supply condition due to continued dry conditions. In order to be conservative, this report assumes a reduction of 40% to the City's Casitas supply for the 2018 and 2019 Supply Drought Impact and a 50% reduction for 2020.
Therefore, the City's projected supply from Casitas for 2019 is 3,128 AFY (40% reduction) and 2,675 AFY in 2020 (50% reduction). The Casitas projected supply in 2025 and 2030 includes growth projections within Casitas' boundaries. Therefore, the City's projected supply from Casitas is 5,669 AFY for 2025 and 5,841 AFY for 2030.

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

Due to the continued drought conditions and heightened environmental requirements, the City's ability to draw water from the Ventura River continues to be significantly challenged and impacted. If the current drought continues through 2020, the supplies will be further impacted. Ventura Water staff is evaluating a multi-year drought based on City Council recommendation. To determine the 2019 and 2020 supply drought impact, the average of the two most recent driest years (2015 and 2016) was used for the projections. Therefore, the projected future water supply for 2019 and 2020 from the Ventura River / Foster Park is 1,573 AFY.

As discussed above in the Normal (non-drought) Water Supply section, production wells at Foster Park were destroyed during 2001 and 2005 storm events. These events have reduced the City's ability to extract water from Foster Park. The 2018 Capital Improvement Program includes the Foster Park Wellfield Production Restoration project. The project involves the replacement of the destroyed wells and construction of new facilities to restore historical production capabilities of 6,700 AFY. The project is scheduled to be completed by 2025. A range of conditions was used to estimate 2025 and 2030 projected future water supply, which assumes normal conditions. The low end equals the City's highest production value for the past 10 years (2008 to 2017), and the

high end equals the expected production from the completed Foster Park Wellfield Production Restoration project. Therefore, the projected future water supply for 2025 and 2030 from the Ventura River / Foster Park is 3,647 – 6,700 AFY.

Pending litigation, studies being conducted by the State Water Resources Control Board (SWRCB) and the California Department of Fish and Wildlife (CDFW), and the Groundwater Sustainability Plan for the Upper Ventura River Groundwater Basin may impact the amount and/or timing of water the City is able to utilize from the Upper Ventura River watershed.

In September 2014, the Santa Barbara Channelkeeper (SBCK) filed a lawsuit against the State Water Resources Control Board (SWRCB) and the City, alleging that the City had been over-pumping water from the Ventura River. The lawsuit is still pending.

The Ventura River was identified as one of five priority stream systems in the California Water Action Plan (WAP) adopted in January 2014 by Governor Edmund G. Brown Jr. Action four of the WAP, to "Protect and Restore Important Ecosystems", contains a sub-action that states the following:

> *The State Water Resources Control Board and the Department of Fish and Wildlife will implement a suite of individual and coordinated administrative efforts to enhance flows statewide in at least five stream systems that support critical habitat for anadromous fish. These actions include developing defensible, cost-effective, and time-sensitive approaches to establish instream flows using sound science and a transparent public process. When developing and implementing this action, the State Water Resources Control Board and the Department of Fish and Wildlife will consider their public trust responsibility and existing statutory authorities such as maintaining fish in good condition.*

The SWRCB and California Department of Fish & Wildlife (CDFW) are currently working to identify potential actions that may be taken to enhance and establish instream flow for anadromous fish in the Ventura River watershed (and the other four priority watersheds). The SWRCB is developing an integrated groundwater – surface water model to provide a better understanding of water supply, water demand, and instream flow needs in the Ventura River watershed. CDFW is developing streamflow versus habitat relationships in the mainstem Ventura River, and San Antonio Creek, a primary tributary. According to these agencies, this information will be used to enhance flows in the watershed in several ways, including the development of flow criteria and identification of important flow thresholds for conservation, restoration, and protection of southern steelhead in the Ventura River watershed.

The Upper Ventura River Groundwater Basin is designated medium-priority by DWR and the Upper Ventura River Groundwater Agency (UVRGA) has been identified as the GSA for the basin. The UVRGA was formed through a Joint Exercise of Powers Agreement (JPA) by and among Ventura River Water District, Meiners Oaks Water District, Casitas Municipal Water District, Ventura County

Watershed Protection District (VCWPD), and the City. The major components of the JPA include authority, power, membership, directors, voting paradigms and financing. These items were negotiated with the assistance of the Center for Collaborative Policy and included three stakeholder meetings. In addition to representatives from each of the five member agencies, the Board of Directors includes an agricultural stakeholder director and environmental stakeholder director. Additional information, meeting notices, and agendas are available here: http://www.uvrgroundwater.org. The UVRGA has submitted its intent to DWR to begin to development its GSP by January 1, 2022 and DWR expects this basin to reach sustainability by January 1, 2042.

3. Mound Groundwater Basin (Mound Basin)

The City anticipates completing a study within the next year 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.

According to the adopted 2016-2022 Capital Improvement Program, Mound Wells 2 and 3 are anticipated to come online within the next few years. Mound Well 3 is anticipated to be operational by 2019 and Mound Well 2 is anticipated to be operational by 2020. Thus, the projected water supply from the Mound Basin for the future is greater than the current 2018 supply of 2,130 AFY (discussed in the Current Supply section above). Although 2019 and 2020 future projections are evaluated under drought impact, the addition of Mound Wells 2 and 3 will help alleviate current operational constraints. To calculate the 2019 supply numbers, Ventura Water staff used the most recent five year production average (2013 to 2017). Therefore, the projected future water supply for 2019 from the Mound Basin is 2,585 AFY. To calculate the 2020, 2025, and 2030 supply numbers, the 10 year average (2000 to 2009) from the Mound Basis was used. Therefore, the projected future water supply from the Mound Basin from 2020 to 2030 is 4,000 AFY.

The Mound Basin is designated medium-priority by DWR and the Mound Basin Groundwater Sustainability Agency (MBGSA) has been recognized by DWR as the GSA for the basin. The MBGSA was formed through a Joint Exercise of Powers Agreement (JPA) by and among the United Water Conservation District (UWCD), the City, and the County of Ventura. In addition to representatives from each of the 3 member agencies, the Board of Directors includes an agricultural stakeholder director and environmental stakeholder director. Meeting notices, and agendas are available here: https://www.cityofventura.ca.gov/1180/Mound-Basin-GSA.

4. Oxnard Plain Groundwater Basin (Fox Canyon Aquifer)

As discussed in the Current Water Supply section, FCGMA's Emergency Ordinance E currently dictates the City's groundwater allocation in the Oxnard Plain. The City's Temporary Extraction

Allocation (TEA) was set at 4,827 on July 1, 2014. However, the ordinance also established phased reductions to the TEA. As of January 1, 2016, a 20% total reduction of the TEA is in effect. The City's allocation is 3,862 AFY until further action is taken by the FCGMA.
Therefore, the projected future supply from the Oxnard Plain Basin for 2019, 2020, 2025, and 2030 is 3,862 AFY.

FCGMA and SGMA

The Oxnard Plain Basin is designated as a high priority basin by DWR. The Fox Canyon Groundwater Management Agency (FCGMA) was named as the GSA for the Oxnard Plain Basin (designated as high-priority). FCGMA released a preliminary draft GSP for the Oxnard Plain Basin for public comment in December 2017. Significant work remains before a draft GSP will be developed that includes sustainable yield estimates. The FCGMA Board is considering replacing Emergency Ordinance E with an interim allocation plan until the GSP is complete. However, this allocation plan is not expected to affect the City's allocation in 2018.

5. Santa Paula Groundwater Basin (Santa Paula Basin)

As discussed in the Normal Water Supply section, the Santa Paula Basin is subject to a stipulated judgment and is managed by the Santa Paula Basin Technical Advisory Committee (TAC) with equal representation from United Water Conservation District (UWCD), the Santa Paula Basin Pumpers Association (SPBPA), and the City. The TAC is charged with establishing a program to "monitor conditions in the basin, including but not necessarily limited to verification of future pumping amounts, measurements of groundwater levels, estimates of inflow to and outflow from the basin, increases and decreases in groundwater storage, and analyses of groundwater quality." The Judgment also allows for the development of a management plan for the operation of the basin and empowers the TAC to determine the safe yield of the basin.

In 2014, UWCD commissioned the Santa Paula Basin Hydrogeological Characterization and Safe Yield Study. Comment letters were provided by the SPBPA and the City on two drafts of the study. In 2017, the report was finalized and concluded that the safe-yield of the Santa Paula Basin was in the range from 24,000 to 25,500 AFY (for the 1999 to 2012 base period). When it was submitted to the Court, it included the following commentary: "The TAC does not perceive potential adverse impacts to the Basin as an immediate concern for several reasons. First, pumping levels have been steady at an extraction rate of approximately 25,500 AFY for many years and there is no evidence that cumulative production from the Basin will expand substantially in the near future. Second, the TAC members, in coordination with other Basin stakeholders, are pursuing opportunities for yield enhancement as discussed in the Projects Study. Finally, the TAC has also formed a technical work group to identify specific Basin conditions (e.g., water levels in key monitoring wells), which if observed (i.e., "triggered") would cause the TAC to recommend reductions in allowed pumping to

ensure that the health of the Basin is not degraded."

If basin conditions change, 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. Currently, the TAC is working on various basin management measures, including potential triggers for the above stages and potential projects to enhance the sustainable yield of the basin.

Based on the information above, the low range of this water supply remains at 1,141 AF for the projection of the drought through 2020 and in 2025 to 2030 under normal conditions. This is based on an assumed worst case scenario that the basin will be determined to be in a Stage 2 overdraft per the Court's Stipulated Judgment. Additional water rights of 40.9 AF total were acquired for the past development of Tract 4632 (5.8 AF) and development of Phase I of Tract 5632 (12 AF) and Tract 5774 (23.1 AF).

Therefore, the projected future water supply in 2019, 2020, 2025 and 2030 is a range of 1,141 to 3,000 AFY for the original City allocation and 40.9 AFY for City acquired water rights.

Santa Paula Basin and SGMA

The Santa Paula Basin is largely exempt from SGMA because a stipulated judgment among three parties, including the City, already manages it. The Santa Paula Basin is considered adjudicated, which means that groundwater allocations and extraction rights are already determined.

6. Recycled Water

The estimated anticipated future water supply for recycled water is based on the 2015 Urban Water Management Plan projections for recycled water.

7. VenturaWaterPure

The City's Ventura Water Reclamation Facility (VWRF) treats the wastewater generated by the City's 30,000 homes and businesses to stringent standards before releasing the 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. This water is regulated with a permit issued by the Los Angeles Regional Water Quality Control Board (RWQCB or Regional Board), which is renewed every five years.

Prior to the adoption of the renewed VWRF NPDES permit in 2008 (Order R4-2008-0011), a number of questions arose regarding the definition of enhancement, the benefits that the discharge provides to the SCRE and adjacent subwatershed, and how discharge practices could be modified over time to protect and enhance habitat and water quality of the portion of the

SCRE directly affected by the VWRF discharge. To address these issues, the Regional Board required the City to complete a series of three Special Studies as a condition of the City's NPDES discharge permit, which are summarized below:

- Estuary Subwatershed Studies (September 2011) (i.e., Phase 1 Estuary Studies) – This report, published in 2011, provided a synthesis of information derived from a series of studies required by the 2008 NPDES Permit regarding the SCRE ecosystem functioning under existing conditions and evaluated potential effects of potential various diversion/discharge alternatives and management measures on realization of beneficial uses and ecological resources of the SCRE.
- Treatment Wetlands Feasibility Study (March 2010) – This study evaluated potential benefits of constructed treatment wetland to achieve additional reductions in nutrients, copper and other metals, and evaluated the comparative water quality, beneficial use and environmental benefits of alternative wetland designs and treatment process upgrade projects. This study evaluated VWRF plant and treatment process upgrade and natural treatment wetland projects to provide a basis for determining project alternatives to carry forward to conceptual design and evaluation.
- Recycled Water Market Study (March 2010) – This study evaluated the feasibility of expanding, and the constraints impeding expansion of the City's existing reclaimed water system. This study informed the City of the many constraints, and particularly the substantial distribution and seasonal constraints, associated with expanding the use of reclaimed water to offset other potable water demand by, for example, using reclaimed water for urban and agricultural irrigation.

Following completion of these three Phase 1 Studies and receipt of stakeholder feedback, a number of additional data collection and analysis needs were identified by the City and other stakeholders in the Phase 1 Estuary Studies process, including the need to collect more hydrologic and water quality data to improve the understanding of SCRE functioning in relationship to VWRF tertiary treated discharges to help assure protection of the sensitive wildlife and aquatic resources and habitats.

In addition, in response to execution of the Consent Decree and stakeholder and regulatory agency input on the Phase 1 Estuary Studies, the City recognized the need to integrate the conclusions of all three of the Phase 1 Estuary Studies into a single report that could guide a future process for identifying alternative projects that could serve both as a local water supply project, and as the Diversion Infrastructure Project to divert VWRF discharges from the SCRE to water reclamation uses, notwithstanding the identified constraints on expansion of the City's existing reclaimed water system.

To begin the analysis of these identified needs, the City prepared the Estuary Special Studies Phase 2: Facilities Planning Study for Expanding Recycled Water Delivery (March 2013) (Phase 2 Studies). The Phase 2 Studies integrated the conclusions of all three of the Phase 1 Studies, identified a process for selection, planning, and design, and the current environmental review of alternative Diversion Infrastructure Projects, including the City's proposed VenturaWaterPure project, proposed alternatives for nutrient treatment and natural treatment wetlands, and other local water supply augmentation and reliability projects. The amended final report was submitted to the Regional Board in 2014.

At the conclusion of the Phase 2 Studies, several stakeholders expressed concerns about additional data gaps and the Phase 2 Studies report's findings. In response to these concerns, the City's next NPDES Permit renewal (which is currently in effect), Regional Board Order R4-2013-0174 for VWRF discharges, required the City to conduct the following additional "special studies":

- Phase 3 Estuary Studies (Phase 3 Study) – "The Discharger shall perform additional estuary studies to provide sufficient information to allow the Regional Water Board to determine whether or not the continued discharge of effluent enhances the Estuary. The study will clarify the water budget analysis for the Santa Clara River Estuary, to determine whether any effluent discharge is needed to sustain the SCRE native species, and if so how much." Order R4-20013-00174, § VI.c.2.b.i.

- Nutrient, Dissolved Oxygen, and Toxicity Special Study – "The Discharger must perform a special study to identify the cause of nutrient, dissolved oxygen and toxicity impairments in the Estuary. The Dissolved Oxygen Study will include sufficient monitoring, including diurnal monitoring, to determine the suitability of dissolved oxygen (DO) levels for the Estuary's aquatic life. If it is determined that the effluent from the Facility is causing the impairments, the Facility must propose a plan for reducing nutrient loading, including ammonia, nitrogen and phosphorus loading and toxicity impairments." Order R4-20013-00174, § VI.c.2.b.ii.

- Groundwater Special Study – "The Discharger must perform a special study to document the interaction between the estuary, discharge and groundwater and determine if the beneficial use of MUN [any water designated as municipal or domestic supply, MUN, in a Regional Water Board Basin Plan] applies to the water impacted by the discharge." Order R4-20013-00174, § VI.c.2.b.iii.

During this time, the City entered into the Tertiary Treated Flows Consent Decree and Stipulated Dismissal (Consent Decree) with the Wishtoyo Foundation/Ventura Coastkeeper and Heal the Bay. Because the City had entered into the Consent Decree prior to the issuance of Regional Board Order R4-2013-0174, the Regional Board recognized the information that had to be

developed under the decree in issuing the current VWRF NPDES Permit. Specifically, the Regional Board recognized that the Consent Decree requires a determination, through scientific analysis, of the maximum ecologically protective diversion volume (MEPDV), which is defined as the volume or flow of VWRF tertiary treated effluent appropriate to divert from the discharge to the SCRE while still protecting the ecological resources of the SCRE, and the surrounding subwatershed, including the SCRE's sensitive native species and habitats, and particularly those listed for protection under the state and federal Endangered Species Acts. The Regional Board specified in the current NPDES permit Fact Sheet:

"The special studies described in this Order may provide the scientific analysis used to define the MEPDV, but the special studies must provide sufficient and meaningful information to determine if discharge enhances the Estuary. The MEPDV analysis may be used by the Regional Water board staff in its evaluation of Estuary enhancement during the next revision of this Order, projected to take place in November of 2018."

In 2015, the City initiated a pilot project to test the feasibility of constructing an advanced water purification facility (AWPF) to maximize quantity and reliability of potable supplies by purifying tertiary treated effluent produced by the VWRF and optimizing its potable reuse, rather than discharging into the SCRE. The pilot facility operated for 9 months and produced favorable results, indicating highly reliable purification technologies, relatively steady and controlled operational needs and costs, and the absence of risk to public health and safety. As a result, the City is proposing to construct a full-scale AWPF as a component of VenturaWaterPure to augment the City's water supplies and increase local water supply reliability to meet projected future demands, and to divert discharges from the SCRE to water reclamation uses consistent with the Consent Decree.

The Workplan for the Phase 3 Estuary Study, which was prepared by the City with review, input and approval of the Wishtoyo Foundation/Ventura Coastkeeper (Wishtoyo) and Health the Bay, was approved by the Regional Board in December 12, 2014 to set a framework for the Phase 3 Study determinations, including "a finding on estuary enhancement and a recommendation of the [continued] effluent discharge flow rate needed to sustain the estuary's native species."

The Phase 3 Estuary Study evaluated multiple VWRF diversion/continued discharge scenarios ("discharge scenarios") over a range from 0 percent diversion (i.e., continuation of current average flow rate) up to 100 percent diversion of the current discharges (i.e. zero continued discharge) to the SCRE. For the purposes of the MEPDV analysis within the Phase 3 Study, VWRF discharges during the critical current dry-weather, closed mouth condition were determined to average 4.7 MGD. The Study evaluated the impacts on realization of SCRE designated beneficial uses and existing SCRE ecological resources, including sensitive aquatic wildlife species and their habitats listed for protection under the state and federal Endangered

Species Acts, of 11 different discharge scenarios, each varying from the other by a 0.55 MGD flow increment.

The Phase 3 Study found that an MEPDV of between 40-60 percent (1.9 – 2.8 MGD) of current flow in dry-weather closed mouth conditions would be protective of the ecological functions of the SCRE, including aquatic habitats supporting native fish species, nesting and foraging habitat for many native birds as well as other wildlife species. Diversion of 2.8 MGD of the current VWRF discharge would maintain discharge of 1.9 MGD to the SCRE during closed-mouth, dry weather conditions which would maintain the ecological functions of the SCRE and provide the opportunity for improvement of local water supply by diversion of remaining VWRF effluent to potable reuse. While the diversion volume (i.e. the available supply for potable reuse) is 2.8 MGD under current flow, it is expected to increase as additional wastewater flow becomes available, provided that the Continued Discharge Level of 1.9 MGD is maintained during closed-mouth, dry-weather conditions.

The completed Phase 3 Study was submitted to the Regional Board on February 20, 2018. The Phase 3 Estuary Studies Report is subject to review by an independent scientific review panel (SRP), the Regional Board, and other resources agencies. Since a specific diversion volume has not been selected or approved, the range of 2,381 to 3,898 AFY provided in previous reports will be maintained in this year's report for years 2025 and 2030. This figure will be updated in future reports when the diversion volume becomes more certain.

9. 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.

In the contract with Casitas, the City retains full authority and responsibility for determining the point and method of delivery of the allocation. To date, the City has not constructed the improvements necessary to receive direct delivery of its allocation.

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 Office'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.

On March 1, 2016, City Council adopted the 2016-2022 Capital Improvement Program which includes Program Number 97949 – Waterline – Ventura/Oxnard Emergency Water Intertie. This project was recommended in a joint agency study prepared in 2003 to increase system reliability within the two water systems. In lieu of the Ventura/Oxnard emergency connection, Ventura Water is pursuing the State Water Interconnection Project with Calleguas Municipal Water District (Calleguas).

On January 23, 2017, City Council authorized an alignment study by Kennedy/Jenks to determine how the interconnection project can be designed and operated to supply water to serve the regional needs of the City, Calleguas, Casitas Municipal Water District (Casitas), and United Water Conservation District (United). The final alignment study was completed in 2018, and the environmental review process pursuant to CEQA has commenced.

On February 28, 2018, the City issued the Notice of Preparation of a Draft Environmental Impact Report (EIR) for the State Water Interconnection Project (NOP). As stated in the NOP, the project will enable delivery of SWP water by wheeling through Metropolitan Water District of Southern California and Calleguas to the City. The connection will also facilitate direct delivery of SWP water to United and direct or in-lieu delivery of SWP water to Casitas. In addition, the interconnection would allow the City to deliver water to Calleguas during an outage of its imported water supplies. The interconnection will be a pipeline used to transport water between Calleguas’ and the City’s distribution systems. The pipeline will be approximately 7 miles in length originating in the south portion of the City, traversing southerly and easterly through unincorporated Ventura County, to the southwestern end of the City of Camarillo. The draft EIR is scheduled for release in fall of 2018.

As stated in the NOP, “The proposed State Water Interconnection Project is not anticipated to provide any increased water supply volume for the City. However, the project would improve system reliability by providing access to a replacement supply source for the water supplies that have been reduced or have otherwise become less available. It also could meet a necessary

requirement for the VenturaWaterPure Project, since the City may need to demonstrate an available backup supply in order to receive certain State approvals. Additionally, SWP water is a near-term option for providing the necessary water to dilute high TDS levels in groundwater to improve system water quality." Benefits to the City include making up for losses in annual yield from existing supply sources (Lake Casitas, Ventura River, and groundwater), improving water quality, and providing an emergency/backup supply for Ventura Water's proposed potable reuse project, VenturaWaterPure.

While the City's water supply contract for SWP water provides the City with a maximum annual allocation of 10,000 AF, the actual allocation of available water is set by California Department of Water Resources (DWR) annually. DWR allocations are finalized in the Spring of each year and consider the following:

- hydrologic conditions
- existing storage in reservoirs
- operational and regulatory constraints
- contractor demands

Based on historical allocations the range of available SWP water has been 5% to 100% over the last 25 years. However, the running average continues to decline. Given the uncertainty of SWP deliveries and the fact that capacity in MWD and Calleguas' systems must be available in order for water to be wheeled to the City, a range of zero to full allocation of the City's entitlement was selected for 2025 and 2030 projected supplies. Therefore, the projected available water supply in 2025 and 2030 for SWP water delivered by the State Water Interconnection Project is estimated to be 0-10,000 AFY.

The City's projected future water supply portfolio is summarized in Table 4-3.

Table 4-3
Summary of Projected Future Water Supply from Existing and Potential New Sources

	Existing	Future			
Water Supply Source [1]	**2018 Supply Drought Impact (AFY)**	**2019 Supply Drought Impact (AFY)**	**2020 Supply Drought Impact (AFY)**	**2025 Supply (AFY)**	**2030 Supply (AFY)**
Casitas Municipal Water District	3,204 [2]	3,128 [2]	2,675 [3]	5,669 [4]	5,841[4]
Ventura River / Foster Park	2,384 [5]	1,573 [6]	1,573 [6]	3,647 – 6,700 [7]	3,647 – 6,700 [7]
Mound Groundwater Basin	2,130[8]	2,585[9]	4,000[10]	4,000[10]	4,000[10]
Oxnard Plain Groundwater Basin [11]	3,862	3,862	3,862	3,862	3,862
Santa Paula Groundwater Basin					
Original City Allocation [12]	3,000	1,141-3,000	1,141-3,000	1,141-3,000	1,141-3,000
City Acquired Water Rights [13]	40.9	40.9	40.9	40.9	40.9
Recycled Water	700	700	700	700	865 [14]
VenturaWaterPure [15]	0	0	0	2,381-3,898	2,381-3,898
TOTAL	**15,321**	**13,030 – 14,889**	**13,992-15,851**	**21,441 – 27,870**	**21,778 – 28,207**
State Water [16]				**0- 10,000**	**0-10,000**

Note: Projected supply values do not take into account water quality for all sources or account for loss of one source.
[1] None of these numbers preclude the City's water rights.
[2] 40% drought impact based on 2017 agreement with casitas
[3] Projects that Casitas will declare Stage 5 (50% reduction) if the drought continues to 2020.
[4] Casitas future supply is adjusted as demand increases within the Casitas service area based on the absorption rate in Table 3-8.
[5] 5 year production average from 2013-2017.
[6] Average of 2 most recent driest years (2015 -2016).
[7] Based on the highest City production value in the past 10 years (2008-2017) and the intent of the City to restore production to the historical levels by 2025.
[8] Three year average production (2015-2017).
[9] Five year average production (2013-2017).
[10] Ten year average production (2000-2009); operational limitations removed once replacement wells come online.
[11] Fox Canyon Groundwater Management Agency (FCGMA) Emergency Ordinance E allocations were adopted by FCGMA Board on April 11, 2014. Temporary extraction allocation for FY 2016 = 3,862 AFY.
[12] The Santa Paula Basin Judgment allows the City to utilize on average 3,000 AF annually. Assumes the worst case scenario that the basin is determined to be in a Stage 2 overdraft per the Court's Stipulated Judgment and the City is reduced to an allocation of 1,141 AFY during drought conditions.
[13] Water rights acquired for the past development of Tract 4632 and development of Phase 1 of Tract 5632 and Tract 5774.
[14] From the 2015 Urban Water Management Plan.
[15] Since a specific diversion volume has not been selected or approved, the previous range provided in previous reports will be maintained for years 2025 and 2030.
[16] Low range reflects potential limitations in wheeling capacity and uncertainty of SWP deliveries. High range assumes full allocation of the City's 10,000 AF per year entitlement.

E. 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. Ocean Desalination

In 2013, City staff was engaged in discussions with local water agencies in regard to potential regional desalination projects. In the City's 2015 UWMP, seawater desalination was included as a potential future part of the City's long term water supply portfolio and as an additional emergency water supply during times of drought. The desalination facility would be designed with a delivery capacity of up to 2.7 million gallons per day or 3,000 AFY. In 2016, as part of the development of the Water Rights Dedication and Water Resource Net Zero Fee Ordinance and Resolution (see Chapter 5 Programs and Policies), the "Evaluation of a Water Resource Net Zero Fee Report" was prepared dated May 11, 2016 by Water Consultancy. The report describes potential additional water supplies identified in the City's Capital Improvement Program (CIP). At this time, Project 74070 Advanced Wastewater Treatment Plant Land Acquisition is listed in the City's Adopted 2016-2022 CIP. The land acquisition is for the expansion of the City's water supply for the construction of potential advanced water purification facilities for potable reuse and/or desalination. The project's time schedule includes planning from 2016 to 2018.

According to the Notice of Preparation of a Draft Environmental Impact Report dated November 1, 2017 for the Ventura Water Supply Projects, the treatment processes required for desalination would be similar to the Advanced Water Purification Facility (discussed in the Recycled Water section above) proposed for the potable reuse project. The potential ocean desalination project would allow ocean water to be used to produce potable water and establish a reliable source of water to provide resiliency during prolonged drought. Since details of the ocean desalination project is in a preliminary stage, ocean desalination is identified as a potential additional future supply source.

5. PROGRAMS AND POLICIES

A. INTRODUCTION

For the past seven years, the City has faced water scarcity caused by persistent drought conditions. The previous Water Supply section shows that the City currently relies exclusively on local water supplies. The local water supplies are dependent on local rainfall for replenishment. Water conservation measures in addition to other policies assist the City in reducing its water demands. The following sections highlight the various programs and policies that have been enacted in previous years which enable the City to continue to provide reliable water sources to customers.

1. Water Conservation Measures/Water Efficiency Plan

Water conservation measures help to sustain our life source for future generations. In September 2011, City Council adopted a five-year Water Efficiency Plan which outlined existing programs and potential programs to engage customers in the pursuit of greater water efficiency. The Water Efficiency Plan focused on efforts including customer and student outreach, reducing outdoor landscape watering, optimizing operational practices, and expansion of recycled water usage. Although implementation of the Water Efficiency Plan has been completed, staff continues to implement programs beyond the duration of the plan. These programs have helped the City in its efforts to achieve voluntary and mandatory water usage reductions established locally and by the State. In February 2014, in response to the current drought, City Council approved a voluntary 10% conservation cutback for Ventura customers. Subsequently in September 2014 the City Council declared that Ventura was in a Stage 3 Water Shortage Emergency calling for 20% mandatory conservation cutback (see Section 7 below) as local water supplies continued to drop during the third year of California's historic drought.

Programs include the following:

- Washing Machine Rebates – From January 2016 to December 2017, the City issued rebates to Ventura Water customers who purchased a more water-and-energy efficient washing machine. A total of 97 rebates were issued during the two year program, which ended December 31, 2017. Benefits of the program include reduced indoor water use.
- Mobile Reuse Program – On May 6, 2016, approval was granted by the LARWQCB and SWRCB for the Wastewater Change Petition WW0083. It increased the amount of recycled water use available from 0.67 MGD to 2.0 MGD. In June 2016, the City launched a program which provides high quality recycled water for local residents and commercial businesses. The recycled water can be picked up at the Fill Station located at the Ventura Water

Reclamation Facility. Residents and City Parks and State Parks utilize the water for landscape irrigation while AERA Energy and Ventura County Transportation Department utilize the water for dust control. From June 2016 through December 2017, a total of 8,066,868 gallons (24.76 acre-feet) of recycled water have been served from the Fill Station for a total 51 participants. Benefits of the program included expanded recycled water usage in the City and conservation of potable water.

- Advanced Metering Infrastructure (AMI) – In December 2016, City Council approved the AMI project which includes replacing approximately 32,000 manually-read water meters with new meters over a three-year period. As of February 2018, the Pilot Program was completed with 110 new meters installed. Benefits of AMI include advanced leak detection notification capabilities and improved accuracy in readings and customer service.

In addition to water waste prohibitions, Ventura Water instituted several mandatory water conservation measures including the following:

- Do not allow water to run and be wasted during outdoor use
- Limit the use of potable water irrigation systems to two days per week
- Do not allow leaks to persist for more than 48 hours
- Do not use a handheld hose without an automatic shutoff nozzle
- Do not operate fountains unless the water is recirculating
- Do not wash or hose down hardscape surfaces such as driveways and sidewalks
- Restaurant water service is by customer request only
- Do not knowingly waste water in any way

The City offers free water conservation aids and on-site residential water surveys to help customers save water and hosts outreach events and contests to promote conservation. In addition several classes related to water conservation are offered or sponsored in part by the City as follows:

- Optimize your Irrigation
- Mediterranean Natives and Drought Tolerant Gardens
- Creating a Sustainable and Balanced Garden Ecosystem

In March 2015 as a recommendation by the Water Shortage Task Force, City Council approved the Water Wise Incentive Program for customers who reduce outside water use. The incentive plan focused on providing more efficient irrigation devices and rebates to customers who replace their lawns with low-water use landscapes. From July 2015 to December 2015, funds were reserved for 328 commercial and residential projects for a total of 353,834 square feet of turf replaced.

In June 2016, City Council approved the Water Wise Incentive Program 2.0 and Free Sprinkler Nozzle Program which provides incentives for turf removal and free high efficiency nozzles to participants.

Water Wise 2.0 was launched September 2016 and over 230,000 square feet of turf has been removed as of March 2018. Since the program's inception in 2015, Ventura Water has supported over 488 turf replacement projects citywide, resulting in a projected water savings of 26.96 to 42.97 acre feet per year.

In June 2017, staff launched a weather based irrigation controller (WBIC) program. Qualifying customers received a free WBIC, professional installation of the unit, and on-site training. The program had a tremendous amount of participation. From June 2017 through November 2017, all program funds were expended and 150 smart controllers were installed. In March 2018, City Council approved additional funds to continue the WBIC program.

In July 2017, Ventura Water began operating the Neutral Output Discharge Elimination System (NO-DES) unit for water distribution system flushing. Rather than flushing water out of the distribution system, the NO-DES truck circulates the water, filters it and puts it back into the system. The NO-DES truck is an innovative water saving tool to the community.

In May 2016, Governor Brown issued Executive Order B-37-16, "Making Water Conservation a California Way of Life", which directed State agencies to establish a long term framework for water conservation and drought planning with four primary objectives: 1) use water more wisely, 2) eliminate water waste, 3) strengthen local drought resilience, and 4) improve agricultural water use efficiency and drought planning.

In April 2017, the Governor issued Executive Order B-40-17, which lifted the emergency drought declaration, retained prohibitions on wasteful practices, and advanced measures to implement "Making Water Conservation a California Way of Life." Proposed legislation to implement the conservation framework was introduced in 2017. Two key long term conservation bills, Assembly Bill 1668 and Senate Bill 606, were held in Legislature in September 2017 and became two-year bills.

Although the emergency drought declaration was lifted for the State in April 2017, City Council confirmed that the City remained in a Stage 3 Water Shortage Emergency in May 2017. Despite the Governor's lifting of the State emergency drought declaration, the goals and objectives of "Making Water Conservation a California Way of Life" remain consistent with the City's ongoing water shortage response and future planned efforts. Demand was met through implementation of mandatory conservation measures and Ventura Water's customers' responses to conservation.

2. Water Shortage Task Force

The City Council created the Water Supply Strategy Task Force, later functionally renamed the Water Shortage Task Force (Task Force), on July 21, 2014 to advise the City Council as actions were needed to respond to reduced water supplies due to the prolonged drought. The Task Force addressed revisions to the City's Water Shortage Event Contingency Plan (below), the development of an incentive

program to assist residents in their drought response and proposed a drought rate structure to assist Ventura Water with a full cost recovery of revenue loss during a water shortage.

In June 2015 Council approved the four-tiered (drought) water rate structure recommended by the Task Force that sends a strong message for conservation of Ventura's local resources. The rates increased to achieve full revenue recovery within each tier or customer class, and by doing so, further encourage conservation.

3. Water Shortage Event Contingency Plan

It was proposed at the July 7, 2014 City Council Meeting that the existing Water Shortage Event Contingency Plan, a required section of the City's 2010 Urban Water Management Plan, be updated with community input to provide a framework to address a range of potential events that could result in serious water shortages, including drought, earthquakes or water supply failures. In response, the City Council asked that a Task Force be created to make recommendations to the revision of the Water Shortage Event Contingency Plan to establish what water shortage actions should be undertaken by the City and its water customers that would be most acceptable and appropriate for Ventura. In addition, the Task Force members were asked to provide a customer perspective of the perceived effectiveness of different incentives to reduce water usage, as well as potential rate options to reduce water use. On March 9, 2015, the City Council approved the Water Shortage Event Contingency Plan prepared by the members of the Water Shortage Task Force which incorporates the agreed policy considerations by the members of the Task Force.

The Water Shortage Event Contingency Plan (WSECP) includes stages of action to respond to water shortage events. The City developed a six-stage contingency plan to reduce demand up to 60% during a severe or extended water shortage event including both voluntary and mandatory stages. As mentioned in Section 5. Water Conservation Measures/Water Efficiency Plan, in September 2014, the City Council declared that Ventura was in a Stage 3 Water Shortage Emergency calling for 20% mandatory conservation cutback. The Stage 3 trigger indicates that annual supply projection is between 20% and 29% below normal year supply projection. The annual supply projection is from Table 4-3 of the most recent CWRR and the normal year supply is identified from Table 4-1 of the 2013 CWRR. The WSECP noted that the baseline supply value will not change through the duration of the event. Therefore, the City is still in the current drought and Table 4-1 of the 2013 CWRR is utilized for the baseline supply value.

4. Establish Water Rights Dedication and Water Resource Net Zero (In Lieu) Fee Ordinance and Resolution

In September 2012, Ventura Water took the concept of a water rights ordinance to Council. Council directed staff to prepare a draft water rights ordinance and return to Council. Public Workshops on the

concept of a water rights ordinance were held in July and October of 2013 and several presentations were made at public meetings. In March 2014 staff gave a presentation to Council at a special workshop on the proposed Water Dedication and In-Lieu Fee Ordinance and Resolution. The Ordinance to Establish Water Dedication and In-Lieu Fee Requirements for New or Intensified Development and its associated resolution establishes a mechanism whereby developers can dedicate adequate water supplies to support a proposed new or intensified development or pay an in-lieu fee so that the City can develop the necessary water supplies. In addition, if a developer is able to demonstrate extraordinary efficiency they can receive credit for the water savings, and thereby reduce the in-lieu fee they would be required to pay. Ventura Water returned to Council in June 2014 and recommended that Council approve the proposed Water Dedication and In-Lieu Fee Ordinance and Resolution. Rather than approve the ordinance at that time the Council discussed the formation of a Water Commission to investigate the topic. The Water Commission worked diligently on the draft Water Rights Dedication and Water Resource Net Zero Fee Ordinance and Resolution ("Ordinance") from September 2015 to March 2016. The Water Commission approved a final draft at the March 22, 2016 meeting for recommendation to Council in April 2016.

Public meetings on the draft Ordinance were held April 2016 through June 2016 with the Chamber of Commerce Group, City Planning Commission, Midtown Community Council, Building Industry Association (BIA) and developers, Eastside Community Council, and Westside Community Council. On June 6, 2016, City Council voted 6-1 to adopt the Ordinance and Resolution. On August 11, 2016, the Ordinance became effective and requires all new and intensified development to offset the demand associated with its impact on the water system. The Ordinance does not apply to projects for which entitlements have been approved or building permits issued prior to the effective date of the Ordinance.

5. Water Commission

The City Council approved in January 2015 an ordinance establishing a Water Commission to serve in an advisory capacity to the Council on various policy topics related to water resources. The Council further amended the ordinance in May 2015 and a seven member Water Commission with two alternate members was formed as part of Ventura Water's ongoing public outreach and education effort, and to help with long term planning.

The Water Commission reviews and makes advisory recommendations regarding water rates; water resource infrastructure projects in the five-year capital improvement program; the integrated water resource management plan; water supply options; the Urban Water Management Plan approval process; a water dedication and net zero fee requirement; and other water resources issues.

The Water Commission has reviewed and discussed the following general topics noted below as well as many specific topics since their initial meeting in June 2015 through December 2017.

- Santa Clara River Estuary Studies
- Water Wise Incentive Programs
- Public Outreach Program
- Sustainable Groundwater Management Act (SGMA)
- Overview of Local Groundwater Basins
- Model Water Efficient Landscape Ordinance
- Upper Ventura River GSA
- Mound Basin GSA
- Recycled Water Program
- Urban Water Management Plan
- Drought Update
- Public Outreach Programs
- Recycled Water Mobile Reuse
- Ocean Desalination
- Ventura Water Reclamation Facility Evaluation
- Water Rights Dedication and Water Resource Net Zero Policy
- Status on the Santa Paula Basin
- State Water Interconnect Project
- Community Development Update
- Drought and Water Shortage Update
- Water and Wastewater Rate Study
- Groundwater Sustainability Agencies
- Capital Improvement Program for Water and Wastewater Projects
- Operations and Capital Expenditure Requirements
- Brown Act Training and Water Commission Rules of Procedure

6. CONCLUSIONS & RECOMMENDATIONS

A. CONCLUSIONS

The City's total water demand for the most recent calendar year (2017) of data was 13,973 AFY. Over the past five years (2013-2017), the City experienced an average annual water demand of 15,429 AFY, and over the past ten years (2008-2017), the annual average water demand was 16,515 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 multiple years of drought conditions, it was recommended by RBF Consulting who was commissioned to complete the original 2013 CWRR to include a larger data set to predict a "typical" average annual water demand. In the previous 2013 to 2016 CWRRs, the City had been more comfortable using the most recent 5-year average as the baseline demand condition. However, it was recommended in the 2016 CWRR that the City reconsider using the 5-year average and use the 10-year average in the 2017 CWRR. Thus, the 2017 and 2018 CWRRs utilize the 10-year City annual average. Utilizing the previous 10-year City annual average, the baseline water demand for the 2018 CWRR is 16,515 AF, a decrease of 596 AF from the 2017 CWRR baseline water demand of 17,111 AF. In the previous CWRRs the baseline water demand had been decreasing each year and was a result of approved water rate increases as well as the Council approving, in June 2015, a four-tiered (drought) water rate structure and the February 2014 City call for 10% voluntary conservation, followed by the September 2014 City declaration of a Stage 3 Water Emergency requiring customers to reduce their use by 20% due to the prolonged drought.

The City has a total of 49 projects that are under construction or approved for development. These projects include an additional 847,957 SF of non-residential development and 3,011 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 1,384 AFY. Therefore, the estimated water demands total 17,899 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 2026.

The 2018 CWRR projects out the demands to the Year 2030 which is beyond the year that the approved projects would be fully vested. In order to project out the estimated demand to the Year 2030 an approximate growth rate of 0.54% (Per City Planning Department) was used to estimate the increase in demand from the time all approved projects were fully vested (Year 2026) to the Year 2030.

The City's projected available water supply is constantly changing, depending upon environmental and legal constraints. The City's normal year water supply is 21,381 AFY; however, with drought conditions persisting in 2018, the available water supply may drop to 15,321 AFY in 2018 and if the drought conditions continue, could drop to a low of 13,992 AFY in 2020.

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 653 AFY (by 2026) to meet the additional water demand in the Casitas boundary.

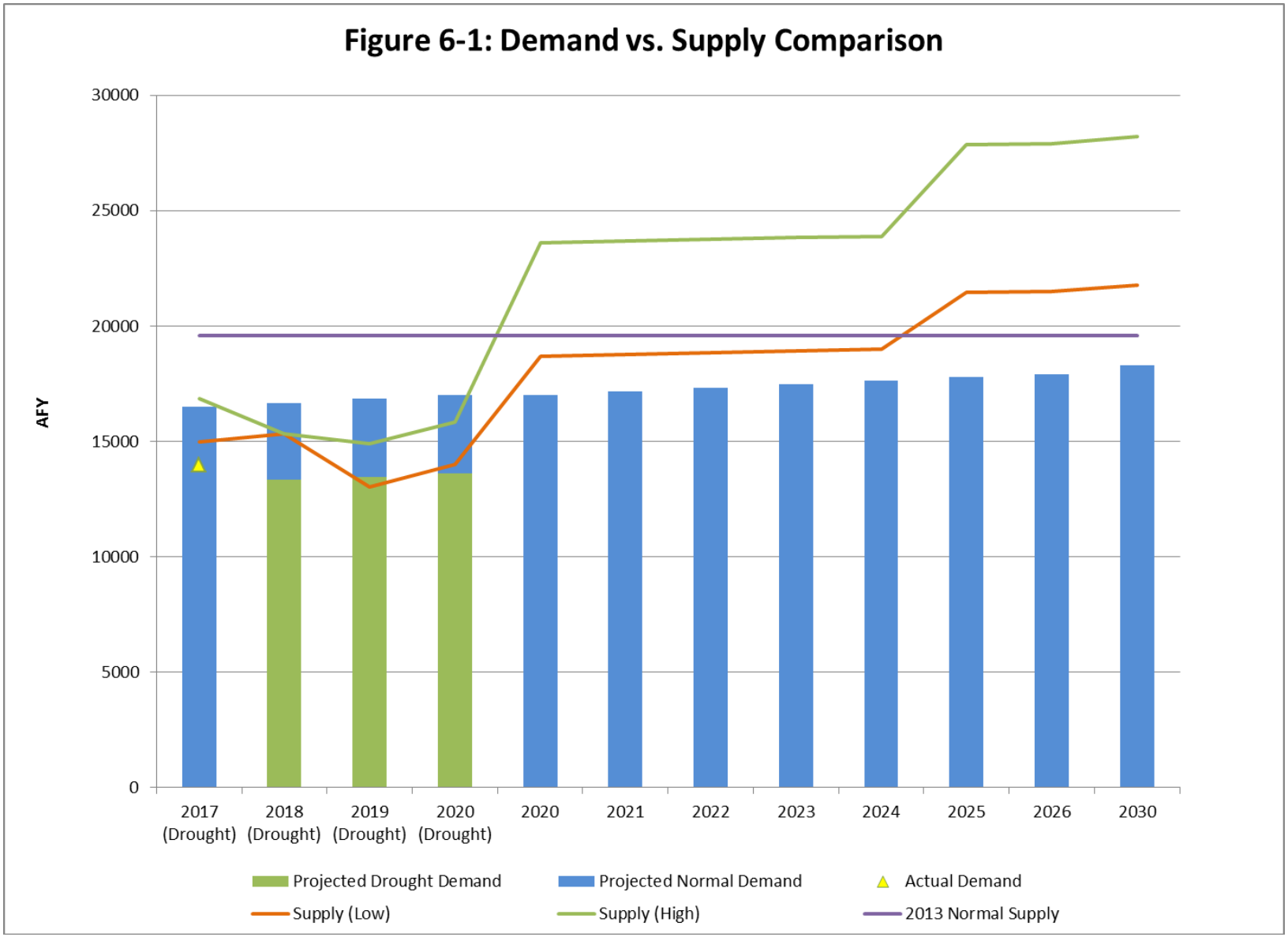
Table 6-1 provides a comparison of the existing water demand and supply, and the near-term water demand and supply. It should be noted that the low end of the water supply range is less than the anticipated demand beginning in year 2018 (Drought).

The water supply range and demand projections are also depicted graphically in Figure 6-1.

Table 6-1
Demand vs. Supply Comparison

Year	Actual Demand AFY	Projected Drought Demand[1] AFY	Projected Normal Demand[2] AFY	Supply Range [3],[5] Low AFY	Low % Diff.	High AFY	High % Diff.
2015	14,194		16,693				
2016	14,262		17,111				
2017 (Drought)	13,973		16,515	14,988	-9.2%	16,847	2.0%
2018 (Drought)		13,341	16,676	15,321	-8.1%	15,321	-8.1%
2019 (Drought)		13,469	16,837	13,030	-22.6%	14,889	-11.6%
2020 (Drought)		13,598	16,998	13,992	-21.5%	15,851	-7.2%
2020			**16,998**	**18,681**	**9.0%**	**23,593**	**28.0%**
2021			17,159	18,757	8.5%	23,669	27.5%
2022			17,320	18,832	8.0%	23,744	27.1%
2023			17,480	18,908	7.6%	23,820	26.6%
2024			17,641	18,984	7.1%	23,896	26.2%
2025			**17,802**	**21,441**	**17.0%**	**27,870**	**36.1%**
2026			17,899	21,487	16.7%	27,916	35.9%
2030 [4]			**18,293**	**21,778**	**16.0%**	**28,207**	**35.1%**

[1] Projected Drought Demand equals a 20% reduction (Stage 3 mandatory conservation) of the calculated projected water demand described above.
[2] Per Table 3-8.
[3] Per Table 4-3.
[4] Projected Normal Demand using approximately .54% growth rate to 2030. The approximately 0.54% growth rate per City Planning Department's data was used to estimate the increase in demand.
[5] Percent differences calculated between projected normal demand and the high and low supply range.



*2013 Normal Supply is the baseline value for determining the Water Shortage Event Stage.

B. RECOMMENDATIONS

The results of this Report indicate that the spread between the current water demand and the current water supply is very tight. If the continued drought condition persists, the supply could be less than the demand. The City's customers will need to continue to conserve and/or pay penalties for overuse of the City's water supply sources while the City secures new water supplies. This presents significant 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 they 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. Consider adding a new project type in the land use tracking spreadsheet for approved projects under CIP or other City approval processes.
7. 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.
8. Continue to develop water supply through demand side management, secure water rights, administer the Water Rights Dedication and Water Resource Net Zero Ordinance approved in July 2016 and continue to integrate the new water supply sources into the City's water supply portfolio.