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DRAFT



# 2020 Urban Water Management Plan for the City of San Buenaventura

Prepared by Kennedy/Jenks Consultants

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### 2020 Urban Water Management Plan **DRAFT**

May 26, 2021

Prepared for  
City of San Buenaventura  
336 Sanjon Road  
Ventura, CA 93002

K/J Project No. 2044229\*00

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| K | Reporting of Energy Intensity of Water                                                             |
| L | 2020 Water Shortage Event Contingency Plan                                                         |

## Acronyms

---

The following abbreviations and acronyms are used in this report.

|     |                                     |
|-----|-------------------------------------|
| AB  | Assembly Bill                       |
| Act | Urban Water Management Planning Act |
| AF  | acre-feet                           |
| AFY | acre-feet per year                  |
| AMI | Advanced Metering Infrastructure    |

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|             |                                                                |
|-------------|----------------------------------------------------------------|
| AWPF        | Advanced Water Purification Facility                           |
| BMPs        | Best Management Practices                                      |
| CALGreen    | California Green Building Code                                 |
| Casitas     | Casitas Municipal Water District                               |
| CAT         | Climate Action Team                                            |
| CCF         | Hundred Cubic Feet                                             |
| CEQA        | California Environmental Quality Act                           |
| Cfs         | cubic feet per second                                          |
| City        | City of San Buenaventura (Ventura)                             |
| COG         | Council of Governments                                         |
| CWRR        | Comprehensive Water Resources Report                           |
| DDW         | State Water Resources Control Board Division of Drinking Water |
| DMMs        | Demand Management Measures                                     |
| DWR         | Department of Water Resources                                  |
| EIR         | environmental impact report                                    |
| EPA         | Environmental Protection Agency                                |
| ERP         | Emergency Response Plan                                        |
| ETo         | evapotranspiration                                             |
| FCGMA       | Fox Canyon Groundwater Management Agency                       |
| Foster Park | Ventura River Foster Park Area                                 |
| FY          | fiscal year                                                    |
| GIS         | Geographic Information System                                  |
| GPCD        | gallons per capita per day                                     |
| Gpf         | gallons per flush                                              |
| Gpm         | gallons per minute                                             |
| GSA         | Groundwater Sustainability Agency                              |
| GSP         | Groundwater Sustainability Plan                                |
| HCD         | State Department of Housing and Community Development          |
| HCF         | hundred cubic feet                                             |
| JPA         | Joint Powers Authority                                         |
| kWH         | kilowatt-hour                                                  |
| LAFCO       | Local Agency Formation Commission                              |
| MBGSA       | Mound Basin Groundwater Sustainability Agency                  |
| MCL         | maximum contaminant level                                      |
| MF          | microfiltration                                                |
| MG          | million gallons                                                |

|               |                                                          |
|---------------|----------------------------------------------------------|
| mg/L          | milligrams per liter                                     |
| MGD           | million gallons per day                                  |
| MOU           | Memorandum of Understanding                              |
| NPDES         | National Pollutant Discharge Elimination System          |
| OVSD          | Ojai Valley Sanitary District                            |
| Plan          | Urban Water Management Plan                              |
| RHNA          | Regional Housing Needs Allocation                        |
| RWQCB         | Regional Water Quality Control Board                     |
| SBX7-7        | Senate Bill 7 of Special Extended Session 7              |
| SCAG          | Southern California Association of Governments           |
| SCRE          | Santa Clara River Estuary                                |
| Sf            | square feet                                              |
| SGMA          | Sustainable Groundwater Management Act                   |
| SGPWA         | San Geronio Pass Water Agency                            |
| SPBPA         | Santa Paula Basin Pumpers Association                    |
| SWP           | State Water Project                                      |
| TAC           | Technical Advisory Committee                             |
| TDS           | Total Dissolved Solids                                   |
| United        | United Water Conservation District                       |
| UF            | Ultrafiltration                                          |
| UVRGA         | Upper Ventura River Groundwater Agency                   |
| UWMP          | Urban Water Management Plan                              |
| VCFCDD        | Ventura County Flood Control District                    |
| VCG           | Ventura County Council of Governments                    |
| Ventura Water | City of San Buenaventura Water and Wastewater Department |
| VWRF          | Ventura Water Reclamation Facility                       |
| WEAP          | Water Efficiency Allocation Plan                         |
| WSECP         | Water Shortage Event Contingency Plan                    |
| WSS           | Water Sense Specification                                |

## Section 1: Introduction/Lay Description

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### 1.1 Overview

This volume presents the Urban Water Management Plan 2020 (Plan) for the City of San Buenaventura and its Ventura Water Department (the City or Ventura Water) service area, which includes the City boundary as well as unincorporated areas within the City's Sphere of Influence. This chapter describes the general purpose of the Plan, discusses Plan implementation, and provides general information about the service area characteristics. A list of acronyms and abbreviations is provided at the end of the table of contents.

### 1.2 Purpose

An Urban Water Management Plan (UWMP) is a planning tool that generally guides the actions of water management agencies. It provides managers and the public with a broad perspective on a number of water supply issues. It is not a substitute for project-specific planning documents, nor was it intended to be when mandated by the State Legislature. For example, the Legislature mandated that a plan includes a section which "describes the opportunities for exchanges or water transfers on a short-term or long-term basis." (California Urban Water Management Planning Act, Article 2, Section 10630(d).) The identification of such opportunities, and the inclusion of those opportunities in a general water service reliability analysis, neither commits a water management agency to pursue a particular water exchange/transfer opportunity, nor precludes a water management agency from exploring exchange/transfer opportunities not identified in the plan. When specific projects are chosen to be implemented, detailed project plans are developed, environmental analysis, if required, is prepared, and financial and operational plans are detailed.

In short, this Plan is a management tool, providing a framework for action, but not functioning as a detailed project development or action. It is important that this Plan be viewed as a long-term, general planning document, rather than as an exact blueprint for supply and demand management. Water management in California is not a matter of certainty and planning projections may change in response to a number of factors. From this perspective, it is appropriate to look at the Plan as a general planning framework, not a specific action plan. It is an effort to generally answer a series of planning questions including:

- What are the potential sources of supply and what is the reasonable probable yield from them?
- What is the probable demand, given a reasonable set of assumptions about growth and implementation of good water management practices?
- How well do supply and demand figures match up, assuming that the various probable supplies will be pursued by the implementing agency?

Using these "framework" questions and resulting answers, the implementing agency will pursue feasible and cost-effective options and opportunities to meet demands.

The California Urban Water Management Planning Act (Act) requires preparation of a plan that:

- Accomplishes water supply planning over a 20-year period in five-year increments (the City is going beyond the requirements of the Act by developing a plan which spans 25 years.)
- Identifies and quantifies adequate water supplies, including recycled water, for existing and future demands, in normal, single-dry, and multiple-dry years.
- Implements conservation and efficient use of urban water supplies.

State legislation, Senate Bill 7 of Special Extended Session 7 (SBX7-7) was signed into law in November 2009, which calls for progress towards a 20 percent reduction in per capita water use statewide by 2020. The legislation mandated each urban retail supplier develop and report an interim 2015 water use target, their baseline daily per capita use and 2020 compliance daily per capita use, along with the basis for determining those estimates. This UWMP reports on Ventura Water's final progress in meeting the SBX7-7 targets.

In short, the Plan answers the question: *Will there be enough water for the area served by the City in future years, and what mix of programs should be explored for making this water available?*

It is the stated goal of the City to deliver a reliable and high-quality water supply for customers, even during dry periods. The analysis in this Plan documents that it is necessary for the City to implement planned water supply projects in order to meet normal and dry-year demands. In the near term (2020-2026) until such time as planned supplies come on-line, anticipated supplies in a multiple-dry year are insufficient and the City would have to call on existing customers to undertake extraordinary conservation. After planned water supplies are available the potential for a water supply shortage is lessened.

### 1.2.1 Relationship to the City's Annual Comprehensive Water Resources Report

The Urban Water Management Plan is required by the California State Water Code. The UWMP is a long-term planning tool that provides water purveyors and their customers a broad perspective on water supply issues over a 20-year period (this plan goes further and looks at 25 years). The UWMP is a management tool, providing the framework for action but not functioning as a detailed project development plan.

In 2013 the City Council directed Ventura Water and the Community Development Department to work together to develop a short-term balance of water supply and demand. The result of this collaboration is the annual Comprehensive Water Resources Report (CWRR). The CWRR specifically focuses on water demand of approved (entitled) projects only. The CWRR focuses on a short timeframe and on near-term demand changes. The CWRR estimates demands from approved projects whereas the UWMP estimates demands from population projections. In the latest 2021 CWRR the estimated demand of approved projects would be fully vested by year 2025. This latest CWRR estimates demand to the year 2030 using a growth rate of 0.54 percent (the Department of Finance historical data for City of San Buenaventura population growth).

Understanding and monitoring water supply and demand is essential to planning for and managing a stable and reliable water system to support the community and economic growth. The City's supply and demand play an important role and dramatically influence the planning for, development of, and investment of significant dollars in capital improvements, maintaining current water supply and investing in new water supplies. Therefore, the annual CWRR is an important tool that the City utilizes to update the City's annual projected water supply and demand.

### 1.3 Structure and Organization of the Plan

This plan is organized as follows:

- Introduction
- Water Demand
  - SBX7-7 Reduction
- Water Resources
- Recycled Water
- Water Quality
- Reliability Planning
- Demand Management Measures
- References
- Appendices

Appendix A contains a checklist documenting how this UWMP meets the requirements of the Urban Water Management Planning Act and SBX7-7. Starting with the 2015 UWMP, urban water suppliers are required to report and submit information in standardized tables developed by the Department of Water Resources (DWR). These standardized tables are provided as Appendix B of this document.

This plan is being prepared for Ventura Water, a Department of the City, and is an individual rather than Regional Urban Water Management Plan. Data provided in this plan are reported in calendar years rather than fiscal years. To the extent possible water volumes are reported in acre-feet (AF). Tables 1-1 and 1-2 document the structure of this plan.

**TABLE 1-1  
PUBLIC WATER SYSTEM COVERED BY THIS PLAN**

| <b>Public Water System Number</b> | <b>Public Water System Name</b>           | <b># of Municipal Connections 2020</b> | <b>Volume of Water Supplied 2020 (AF)*</b> |
|-----------------------------------|-------------------------------------------|----------------------------------------|--------------------------------------------|
| CA5610017                         | City of San Buenaventura Water Department | 32,285                                 | 13,556                                     |

Notes: \*Includes all metered consumption

**TABLE 1-2  
AGENCY AND PLAN STRUCTURE**

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**Type of Agency**

☐ Agency is a Wholesaler

☒ Agency is a Retailer

---

**Fiscal or Calendar Year**

☒ UWMP Tables are in Calendar Year

☐ UWMP Tables are in Fiscal Year

---

**Units of Measure Used in this UWMP**

☒ Acre Feet (AF)

☐ Million Gallons (MG)

☐ Hundred Cubic Feet (CCF)

---

## 1.4 Implementation of the Plan

Preparation of UWMP 2020 was coordinated by Ventura Water. Ventura Water staff met with and coordinated the development of the UWMP with various City Departments as well as the Ventura Water Commission. Based on the City's 2005 General Plan, Sustainable Infrastructure, Policy 5B, Ventura Water has adopted guidelines which require that adequate water supply, system capacities, and wastewater collection system and treatment capacities are available before new development can be approved by the Community Development Department. This subsection provides the cooperative framework within which the Plan will be implemented including agency coordination, public outreach, and resources maximization.

### 1.4.1 Joint Preparation of the Plan

The UWMP Act requires a water supplier to coordinate the preparation of its plan with other appropriate agencies in the area. This includes other water suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable. Various agencies are involved in supplying water to the City or having jurisdiction over a portion of the water resources. This section briefly discusses each one. Table 1-3 summarizes the efforts the City has taken to include the various City Departments, agencies, and citizens in the preparation of this document.

**TABLE 1-3**  
**AGENCY COORDINATION SUMMARY [PENDING]**

|                                                                 | Participated in<br>UWMP<br>Development | Commented<br>on the Draft | Attended Public<br>Meetings | Contacted<br>for<br>Assistance | Received Copy<br>of Draft | Sent Notice<br>of Intention<br>to Adopt | Not Involved<br>/ No<br>Information |
|-----------------------------------------------------------------|----------------------------------------|---------------------------|-----------------------------|--------------------------------|---------------------------|-----------------------------------------|-------------------------------------|
| City of San Buenaventura<br>Community Development<br>Department | X                                      |                           |                             |                                |                           | X                                       |                                     |
| City of Oxnard Public<br>Works Water Division                   |                                        |                           |                             |                                |                           | X                                       |                                     |
| County of Ventura<br>Resource Management<br>Agency              |                                        |                           |                             |                                |                           | X                                       |                                     |
| Calleguas Municipal<br>Water District                           | X                                      |                           |                             |                                |                           | X                                       |                                     |
| Casitas Municipal Water<br>District                             | X                                      |                           |                             |                                |                           | X                                       |                                     |
| Fox Canyon Groundwater<br>Management Agency                     |                                        |                           |                             |                                |                           | X                                       |                                     |
| United Water<br>Conservation District                           |                                        |                           |                             |                                |                           | X                                       |                                     |
| Santa Paula Basin<br>Technical Advisory<br>Committee            |                                        |                           |                             |                                |                           | X                                       |                                     |
| Upper Ventura River<br>Groundwater Agency                       |                                        |                           |                             |                                |                           | X                                       |                                     |
| Mound Basin<br>Groundwater<br>Sustainability Agency             |                                        |                           |                             |                                |                           | X                                       |                                     |
| Ojai Valley Sanitary<br>District                                |                                        |                           |                             |                                |                           | X                                       |                                     |
| Ventura County Local<br>Agency Formation<br>Commission          |                                        |                           |                             |                                |                           | X                                       |                                     |

- **City of San Buenaventura Community Development Department**  
The Community Development Department is responsible for planning and zoning, economic development, housing and redevelopment for the City of San Buenaventura. The department works with various city departments, city commissions, and the City Council to guide and provide advice regarding growth in the city. The Community Development Department works with the community and City Council to create and document the vision for land use in the city and the various policies and regulations applicable to redevelopment and new development. The Community Development Department was consulted regarding changes in population and economic activity in the service area which may affect water demands.
- **City of Oxnard Public Water Works Division**  
The City of Oxnard is a neighboring jurisdiction that was contacted to be given the opportunity to provide input to the 2020 UWMP.
- **Ventura County Resource Management Agency**  
Ventura Water serves a very minor amount of water to connections outside the City limits within the unincorporated County. These connections must meet the City's policy for water connections (Municipal Code Section 22.110.055). Ventura Water notified the County Resource Management Agency of the UWMP Update and the methods by which the County could provide input to the plan. In December 2015, the County of Ventura started an update to its General Plan; Ventura Water participated in the General Plan Update. The 2040 General Plan Update was adopted in October of 2020.
- **Fox Canyon Groundwater Management Agency (FCGMA)**  
The FCGMA was created by state legislation in 1982 to manage local groundwater basins and 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 the basin at a safe yield. Ventura Water withdraws water from the Oxnard Plain Groundwater Basin and is subject to the management policies of the FCGMA. Ventura Water notified FCGMA of the 2020 UWMP Update and the methods by which the FCGMA could provide input to the plan.
- **United Water Conservation District (United)**  
United is primarily a groundwater recharger and a wholesale purveyor in central Ventura County and does not provide any water directly to the City. However, all of the City's groundwater wells within the Mound, Oxnard Plain, and Santa Paula groundwater basins are within United's boundaries and are subject to United's semi-annual extraction fees. Ventura Water notified United of the 2020 UWMP Update and the methods by which United could provide input to the plan.
- **Santa Paula Basin Technical Advisory Committee (TAC)**  
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 Ventura Water. 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. Ventura Water notified the Santa Paula Basin TAC of the 2020 UWMP Update and the methods by which the TAC could provide input to the plan.

- **Upper Ventura River Groundwater Agency (UVRGA)**

The Upper Ventura River Groundwater Agency was created in 2016 by several agencies using a Joint Powers Agreement. In 2017, the Agency became a Groundwater Sustainability Agency. The UVRGA is managed by a seven-member Board of Directors – five public agency directors, including Ventura Water, and two stakeholder directors that represent environmental and agricultural interests.<sup>1</sup>

Ventura Water notified the UVRGA of the 2020 UWMP Update and the methods by which the UVRGA could provide input to the plan.

- **Mound Basin Groundwater Sustainability Agency (MBGSA)**

The Mound Basin Groundwater Sustainability Agency (MBGSA) was created in 2017 by several agencies using a Joint Power Agreement and became a Groundwater Sustainability Agency in June 2017. The MBGSA includes United Water Conservation District, the County of Ventura, the City of San Buenaventura, the Mound Basin Ag Water Group (agricultural stakeholder), and an environmental stakeholder. “United is authorized under the California Water Code to conduct water resource investigations, acquire water rights, build facilities to store and recharge water, construct wells and pipelines for water deliveries, commence actions involving water rights and water use, and prevent interference with or diminution of stream/river flows and their associated natural subterranean supply of water (California Water Code, section 74500 et al.). The County of Ventura exercises water management and land use authority on land overlying the entire county including Fillmore and Piru Basins. The City of [San Buenaventura] is a local municipality that exercises water supply, water management, and land use authority within the city’s boundaries.”<sup>2</sup>

Ventura Water notified the MBGSA of the 2020 UWMP Update and the methods by which the MBGSA could provide input to the plan.

- **Ojai Valley Sanitary District (OVSD)**

The OVSD is an adjacent district that collects and treats wastewater from a population of approximately 20,000 across the City of Ojai, the unincorporated Ojai Valley, and the north Ventura Avenue area. Ventura Water notified the OVSD of the 2020 UWMP Update and the methods by which the OVSD could provide input to the plan.

- **Ventura County Local Agency Formation Commission**

The Ventura Local Agency Formation Commission (LAFCo) was formed and operates under the provisions of state law, specifically what is now known as the Cortese-Knox-

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<sup>1</sup> Upper Ventura River Groundwater Agency, <https://uvrgroundwater.org/about/>

<sup>2</sup> Mound Basin Groundwater Sustainability Agency, <https://www.moundbasingsa.org/about-us/>

Hertzberg Local Government Reorganization Act of 2000 (California Government Code Section 56000 et seq.). State law provides for LAFCOs to be formed as independent agencies in each county in California. LAFCOs implement state law requirements and state and local policies relating to boundary changes for cities and most special districts, including spheres of influence, incorporations, annexations, reorganizations and other changes of organization. In this capacity the Ventura LAFCo is the boundary agency for cities and most special districts in Ventura County.

All LAFCOs have general objectives such as to, 1) encourage the orderly formation and expansion of local government agencies, 2) preserve agricultural land resources, 3) discourage urban sprawl. Additionally, all LAFCOs have authorities such as to, 1) regulate boundary changes, 2) establish spheres of influence – the probable physical boundaries and service area of a city or special district, and 3) conduct reviews of public services and special studies, 4) initiate special district consolidations or dissolutions, and 5) act on out of agency service agreements between public agencies and between public agencies and private parties.<sup>3</sup>

Ventura Water notified the LAFCo of the 2020 UWMP Update and the methods by which the LAFCo could provide input to the plan.

- **Casitas Municipal Water District (Casitas)**

Casitas is a wholesaler of treated surface water from Lake Casitas to the City under the terms and conditions of the 2017 Agreement. Casitas' service area is in Western Ventura County, including the City of Ojai, Upper Ojai, the Ventura River Valley area, the City of Ventura to Mills Road, and the Rincon and beach area to the ocean and Santa Barbara County Line. Casitas supplies water to 60,000-70,000 people and to hundreds of farms. The western portion of the City of San Buenaventura is within the Casitas service area<sup>4</sup>. Ventura Water notified Casitas of the 2020 UWMP Update and the methods by which Casitas could provide input to the Plan.

#### 1.4.2 Plan Adoption

The City began preparation of this Plan in August 2020. A draft of the plan was presented to and reviewed by the City Water Commission on April 27 and May 25, 2021. The final draft of the Plan was adopted by the City Council on [TBD] by Resolution No. 2021-[TBD] (Appendix C) and submitted to DWR within 30 days of City Council approval. This plan includes all information necessary to meet the requirements of Water Conservation Act of 2009 (Wat. Code, §§ 10608.12-10608.64) and the Urban Water Management Planning Act (Wat. Code, §§ 10610-10656). Additionally, the plan has also been submitted to all appropriate entities and made available for public review per the requirements of the Urban Water Management Planning Act.

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<sup>3</sup> Ventura Local Agency Formation Commission, <https://www.ventura.lafco.ca.gov/about-us-2/>

<sup>4</sup> Casitas Municipal Water District, <https://www.casitaswater.org/about-us/about-casitas-water>

### 1.4.3 Public Outreach

Urban water agencies preparing plans are required to hold a public hearing on the UWMP prior to its adoption. In response to these requirements, a public hearing was conducted **TBD** by the City to receive public comment and input on the UWMP. Table 1-4 presents a timeline for public participation during the development of the Plan. A copy of the public outreach materials, including paid advertisements, newsletter covers, website postings, and invitation letters are attached in Appendix D.

**TABLE 1-4  
PUBLIC PARTICIPATION TIMELINE**

| <b>Public Workshops and Hearings</b>                      | <b>Date</b>    | <b>Public Participation Task</b>                                   |
|-----------------------------------------------------------|----------------|--------------------------------------------------------------------|
| UWMP Status Update                                        | March 23, 2021 | Presentation at City Water Commission                              |
| UWMP Administrative Draft                                 | April 27, 2021 | Presentation at City Water Commission                              |
| UWMP Final Draft, Final Draft Available for Public Review | May 25, 2021   | Presentation to City Water Commission, Available for Public Review |
| Public Hearing and Adoption                               | June 14, 2021  | City Council Meeting                                               |

## 1.5 System Description

The City is located 62 miles north of Los Angeles and 30 miles south of Santa Barbara along the California coastline. The City's planning area is bounded by the Ventura River on the west, Foster Park on the north, Franklin Barranca and the Santa Clara River to the east, with the Pacific Ocean as the southern boundary. The total planning area encompasses approximately 40 square miles. The City water service area is shown on Figure 1-1.

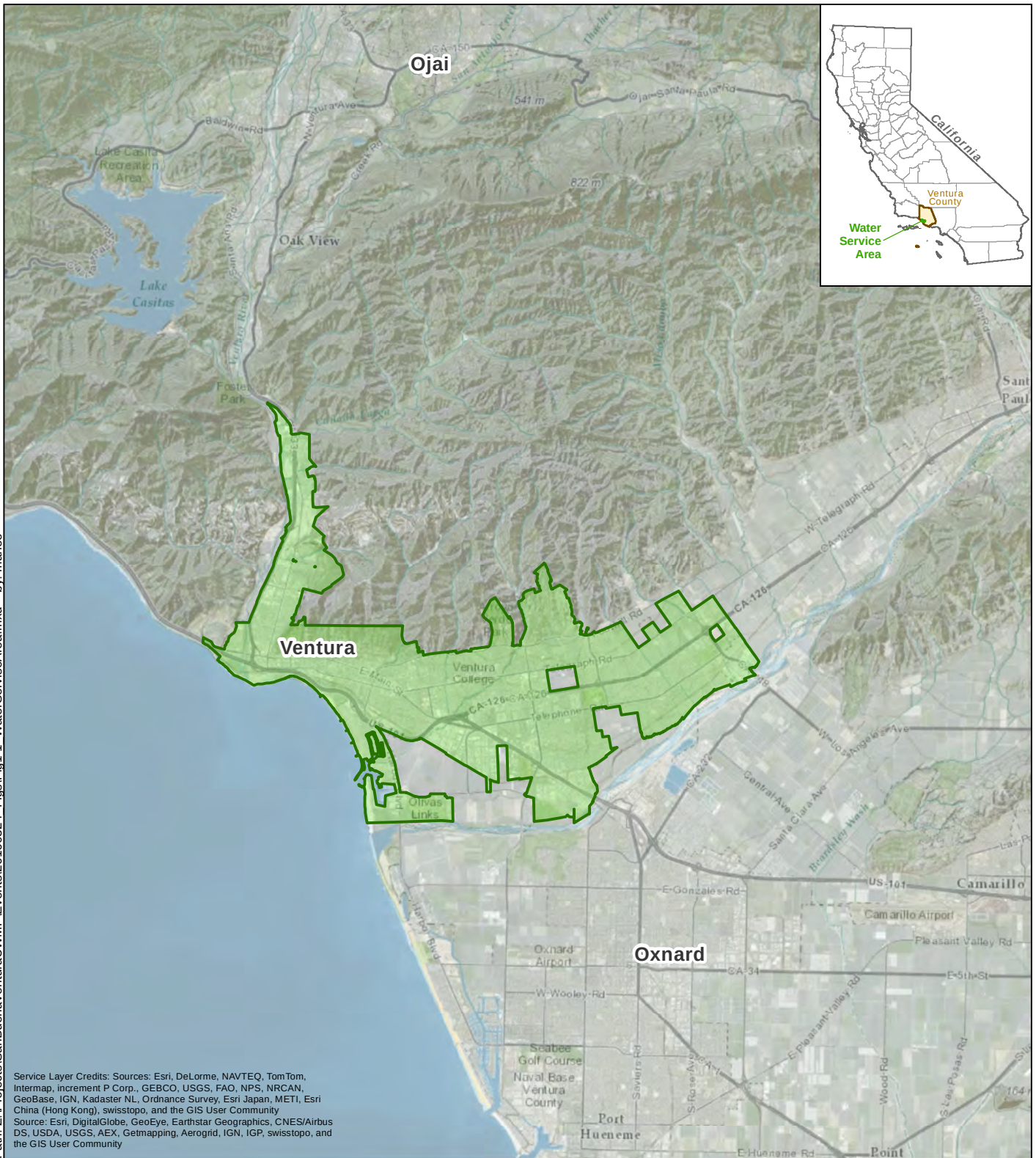
The City developed as a result of the ninth and last mission founded in California by Father Junipero Serra in 1782. In 1866, the City incorporated an area of about one square mile around the original Mission San Buenaventura. Since that time, the City has grown. An estimated population of 113,500<sup>5</sup> is currently supplied water from the City's water system. This includes several unincorporated County areas, such as the upper North Ventura Avenue area to the north and developing areas east of the City boundary.

The City Charter provides for a City Council-Manager form of government. A seven-member City Council is elected at large for four-year terms, with the Mayor selected by the City Council for a two-year term. The City of San Buenaventura Water Commission was formed in 2015 to provide policy guidance on water and wastewater issues to City Council as representatives of the community and Ventura Water customers. The Water Commission reviews and makes advisory recommendations regarding water rates, water resources infrastructure projects in the

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<sup>5</sup> This population estimate is based the 2021 Comprehensive Water Resources Report. Current (2020) population as estimated by the DWR Population Tool (described in section 2.3.20) is 115,815. The calculation of gallons per capita per day targets in section 2.3 uses the population as estimated by the DWR Population Tool.

Path: Z:\Projects\SanBuenaVentura\UWMP\Events\20160324\_Figs\Fig1-1\_WaterServiceArea.mxd by: maripoo



**Legend**



Water Service Area



0 7,000 14,000



Scale: Feet

**Kennedy/Jenks Consultants**

City of Ventura UWMP  
Ventura, CA

**Ventura Water Service Area**

KJ 1644212\*00

January 2021

**Figure 1-1**

five-year capital improvement program, the integrated water resources management plan, water supply options, the Urban Water Management Plan approval process, a water dedication and in-lieu fee requirement, and other water resource issues.

The Spanish Fathers of Mission San Buenaventura developed the first water system for the City. It consisted of an aqueduct (now abandoned) to convey water from the Ventura River, near San Antonio Creek, to a reservoir located behind the Mission.

During subsequent development around the Mission, additional groundwater was obtained from wells in the Ventura and Santa Clara River basins. Water facilities were developed and operated for the City by several individuals and companies over the period of 1869 to 1923. In 1923, the City acquired the water system, along with its water rights from the Ventura River, from the Southern California Edison Company and assumed the responsibility of providing water to City residents. In years following, the City developed additional sources of surface and groundwater, including wells and improvements to the surface water diversion from the Ventura River. Also, since 1960, the City has purchased surface water from Casitas Municipal Water District to supplement its water supplies. As the City boundaries expanded east, the City took over other water systems such as Mound Water Company and Saticoy Water Company. As development occurs on the east side of the City, additional groundwater facilities have also been completed to meet increasing demands.

Currently, the City's water system serves approximately 32,285 water service connections, which includes the population of the City plus some additional areas outside the City boundaries. The western portion of the City is within the Casitas Municipal Water District service area. The mid and eastern portion of the City are within United Water Conservation District's boundaries. Water service is provided to all residential, commercial, industrial and irrigation customers, including fire protection users.

The City water system is a geographically complex system of 16 pressure zones, 10 active wells, 19 booster stations, approximately 385 miles of pipelines ranging from 4-inches to 36-inches in diameter, and a total storage capacity of approximately 52 million gallons (MG) in 27 tanks and reservoirs. The system delivers water from sea level to a maximum elevation of over 1,000 feet. The City operates three purification facilities, including one membrane filtration treatment plant for surface water sources on the west side of the City, and two iron/manganese removal treatment plants for groundwater sources on the east side (City of San Buenaventura 2011). The City also maintains and operates the Ventura Water Reclamation Facility for wastewater treatment and reclamation. See Section 4 for further description of the Reclamation Facility.

## 1.6 Land Use

The City's 2005 General Plan is the basis for understanding land use in the Ventura Water service area. Each year as part of the CWRR, Ventura Water updates the land use information from the 2005 General Plan to reflect projects built in the past year. Table 1-5 provides a summary of land uses in the water service area as estimated through 2020. Based on the "build-out" envisioned in the 2005 General Plan Table 1-5 provides a summary of remaining developable land.

**TABLE 1-5  
SUMMARY EXISTING LAND USE – DECEMBER 2020**

| <b>Land Use</b>     | <b>As of December 2020</b> | <b>Potential Remaining Development</b> |
|---------------------|----------------------------|----------------------------------------|
| Residential (units) | 3,230                      | 5,088                                  |
| Retail (sf)         | 447,026                    | 794,351                                |
| Office (sf)         | 474,521                    | 738,693                                |
| Industrial (sf)     | 1,191,437                  | 1,043,696                              |
| Hotel (sf)          | 25,360                     | 504,640                                |

## 1.7 Population

The City water service area is an established community comprised primarily of residential areas with opportunities for infill development. Large commercial and industrial areas exist along Main Street, Harbor Boulevard, Telephone Road, Ventura Avenue, Telegraph Road and Victoria Avenue (City of San Buenaventura 2011). In 2005, the City adopted the 2005 Ventura General Plan to redirect future growth toward 'Infill First' with an emphasis on encouraging more dense development of housing alongside commercial uses in the above-mentioned commercial corridors, as well as Johnson Drive and Wells Road. The City's estimated population growth for the water service area is shown in Table 1-6. The population numbers reflect both the population within the City limits as well as the minor number of customers in the unincorporated county.

Future projections for areas within the City reflect a 0.54 percent annual growth rate through 2030<sup>6</sup>. From 2030-2045, the future projections for areas within the City also reflect a 0.54 percent annual growth rate<sup>7</sup>. Population estimates were extrapolated to fit five-year increments. It is important to note that these figures are not intended to represent support for, nor reflect any commitment to, this level of growth. Rather, it is to provide a safe margin in planning for long-term water improvements that might be needed given the amount of growth that could be allowed under the City's 2005 updated General Plan as assessed in the certified EIR.

**TABLE 1-6  
POPULATION PROJECTIONS**

|                            | <b>2020</b> | <b>2025</b> | <b>2030</b> | <b>2035</b> | <b>2040</b> | <b>2045</b> |
|----------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Ventura Water Service Area | 113,500     | 116,598     | 119,780     | 123,049     | 126,408     | 129,858     |

<sup>6</sup> Projections were provided by the 2021 Comprehensive Water Resources Report.

<sup>7</sup> Maximum historic growth rate that the City of Ventura saw prior to Thomas Fire (2010-2018).

## 1.8 Social, Economic and Demographic Factors Affecting Water Management

The following information has been taken from the 2019 Local Profile for San Buenaventura prepared by the Southern California Association of Governments. The 2019 Local Profile was the most recent information that could be obtained for the City.

Between 2000 and 2018, the total population of the City of San Buenaventura increased by 10,353 to 111,269. During this 18-year period, the city's population growth rate was lower than the Ventura County rate. The city, while the County seat, makes up 13 percent of the total population of Ventura County. Between 2000 and 2018, the 55-64 age group experienced the largest increase in share of the city's population, growing from 8.3 to 13.7 percent. Conversely the 35-54 age group declined as percent of the population from 32 to 25.6 percent. In this same timeframe, the share of Hispanic population in the city increased from 24.3 percent to 35.4 percent and the share of Non-Hispanic White population in the city decreased from 68.1 percent to 56.3 percent. The share of Non-Hispanic Asian population in the city increased modestly, from 2.9 percent to 3.7 percent as did the share of the Non-Hispanic Black population (1.3 percent to 1.4 percent). There was a modest decline in the share of Non-Hispanic American Indian or Alaska Native population in the city from 0.6 percent to 0.4 percent.

Between 2000 and 2018, the total number of households in the City of San Buenaventura increased by 3,299 units, or 8.6 percent, lower than the county growth rate of 12.5 percent. As of 2018 the City's average household size was 2.6, lower than the county average of 3.1. Seventy seven percent of all city households had 3 people or fewer and about 29 percent of the households were single-person households. A small percentage of households, about 10 percent had 5 people or more. Between 2000 and 2018, homeownership rates decreased and the share of renters increased. In 2018 approximately 46.2 percent of households were renters and 53.8 owners. In 2018, the median home sales price in the city was \$583,000, the same as that in the county overall.

The housing stock consist primarily of single-family detached homes (approximately 89%) with limited amounts of multi-family housing (approximately 11%).

The majority of the City of San Buenaventura housing stock pre-dates 1980 as shown in Table 1-7.

**TABLE 1-7  
HOUSING CHARACTERISTICS CITY OF SAN BUENAVENTURA (2018)**

| Percent of Housing |       | Percent of Housing |       |
|--------------------|-------|--------------------|-------|
| Housing Age        | Stock | Housing Age        | Stock |
| 1939 and earlier   | 7.6   | 1980 to 1989       | 13.2  |
| 1940 to 1949       | 4.2   | 1990 to 1999       | 8.0   |
| 1950 to 1959       | 15.2  | 2000 to 2009       | 8.5   |
| 1960 to 1969       | 22.4  | 2010 to 2018       | 4     |
| 1970 to 1979       | 20.0  |                    |       |

About 34 percent of households earned less than \$50,000 annually and approximately 33 percent of households earned \$100,000 or more. From 2000 to 2018, median household income increased by \$20,693, from \$52,166 to \$72,859. Housing costs are significant portion of income. In 2018 housing costs accounted for an average of 34.7 percent of total household income for renters and an average of 22.5 percent of total household income for homeowners.

Data shows a decreasing number of jobs in the city from 2007 to 2018 with a significant decline in jobs in the manufacturing sector (17.2 percent) and construction sector (declined of 37.7 percent), and a modest decline in administrative and professional jobs (6.1 percent).

## 1.9 Climate

The City has a climate that is similar to a Mediterranean coastal city. That is, the winters are cool, and the summers are mild. The average temperature range is in the 70s and it is uncommon for the temperature to drop below freezing. The area has an average rainfall of approximately 13.5 inches. Table 1-8 shows the average annual climate information by month.

**TABLE 1-8  
ANNUAL CLIMATE INFORMATION**

|                                   | <b>Jan</b> | <b>Feb</b> | <b>Mar</b>  | <b>Apr</b> | <b>May</b> | <b>Jun</b> |
|-----------------------------------|------------|------------|-------------|------------|------------|------------|
| Standard Monthly Average ETo (in) | 2.5        | 2.6        | 3.7         | 4.6        | 5.1        | 5.3        |
| Average Rainfall (in)             | 3.51       | 2.73       | 1.89        | 0.90       | 0.29       | 0.04       |
| Average High Temperature (°F)     | 66.9       | 65.3       | 68.2        | 68.0       | 67.7       | 70.9       |
|                                   | <b>Jul</b> | <b>Aug</b> | <b>Sept</b> | <b>Oct</b> | <b>Nov</b> | <b>Dec</b> |
| Standard Monthly Average ETo (in) | 5.9        | 5.5        | 4.3         | 3.4        | 2.6        | 2.2        |
| Average Rainfall (in)             | 0.03       | 0.01       | 0.07        | 0.81       | 0.81       | 2.47       |
| Average High Temperature (°F)     | 73.0       | 74.3       | 74.3        | 73.7       | 71.2       | 69.9       |

**Source:**

Evapotranspiration (ETo) data from Station #152 in the City of San Buenaventura as provided on the CIMIS website database at [www.cimis.water.ca.gov](http://www.cimis.water.ca.gov) for the period of record from January 2000 to November 2020.

The average rainfall data is from Ventura County Watershed Protection District's web site for Station 066E, [https://www.vcwatershed.net/hydrodata/php/getstations.php?dataset=rain\\_hour&order=site\\_id](https://www.vcwatershed.net/hydrodata/php/getstations.php?dataset=rain_hour&order=site_id), for the period October 2005 to September 2020.

The average temperature figures are from the Western Regional Climate Center web site at [www.wrcc.dri.edu](http://www.wrcc.dri.edu) for Station 049285 VENTURA.

## 1.10 Potential Effects of Climate Change

A topic of growing concern for water planners and managers is climate change and the potential impacts it could have on California's future water supplies. Climate change models have predicted that potential effects from climatic changes will result in increased temperature, early snow melt, and a rise in sea level.

In the 2013 update of the *DWR California Water Plan*, the implications of future climate conditions are evaluated. These changing hydrological conditions could affect future planning efforts, which are typically based on historic conditions. The *California Water Plan* identifies the following probable impacts due to changes in temperature and precipitation:

- More winter runoff and less spring/summer runoff due to warmer temperatures.

- Greater extremes in flooding and droughts.
- Greater water demand for irrigation and landscape water due to increased temperatures and their impacts on plant water needs.
- Increased sea level rise, increased threat of coastal flooding, and salt water intrusion into coastal groundwater aquifers.

In the 2019 report of *Projected Changes in Ventura County Climate* (Oakley et. al. 2019), the implications of future climate conditions are evaluated. These changing hydrological conditions could affect future planning efforts, which are typically based on historic conditions. The report of *Projected Changes in Ventura County Climate* identifies the following probable impacts due to changes in temperature, precipitation, evaporative demand, and other variables:

- Increases in both maximum and minimum temperatures and heat extremes.
- More intense precipitation focused during the winter season.
- Increased evapotranspiration.
- Increased drought risk.
- Potential for longer wildfire season with more ignitions as population growth continues.
- Reduced marine stratus.
- Reduction in Sierra Nevada snowpack.
- Longer duration and more intense atmospheric rivers.

Even without population changes, water demand could increase. Precipitation and temperature influence water demand for outdoor landscaping and irrigated agriculture. It is typical that about half of the water used by residential development is for outdoor use and therefore it is assumed that outdoor water use is a large component of the City of San Buenaventura water demands.

### 1.11 Fundamental Findings of the Urban Water Management Plan

It is the stated goal of the City to deliver a reliable and high quality water supply for customers, even during dry periods. The analysis in this Plan documents that it is necessary for the City to implement planned water supply projects in order to meet normal and dry-year demands. In the near term (2021 to 2024) until such time as planned supplies come on-line, there is little buffer between supplies and demands and it may be necessary for the City to call on existing customers to undertake extraordinary conservation should drought persist. After planned water supplies are available the potential for a water supply shortage is lessened.



## Section 2: Water Demands

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### 2.1 Overview

This chapter describes historic and current water usage and the methodology used to project future demands within the City's service area. The City's water system provides potable water to residential, commercial, institutional, industrial, and irrigation customers. Untreated water is provided to an industrial user and a few irrigation customers in the vicinity of the raw water pipeline system in the North Ventura Avenue area. Recycled water is provided for general irrigation of two golf courses, a City park, and landscape irrigation along the existing distribution alignment. The City's water use sectors are described below<sup>8</sup>.

- **Residential Sector**  
The residential sector of the City is comprised of single and multi-family residential customers. The residential accounts serve apartment and condominium complexes as well as mobile home parks. The residential sector represents approximately 66 percent of the City's total water consumption. Within the residential sector, single family accounts make up approximately 61 percent of the total residential demand.
- **Commercial/Institutional Sector**  
The City contains several different types of commercial/institutional customers including retail establishments, office buildings, laundries, schools, prisons, hospitals nursing homes, churches, and campgrounds. The City includes several tourist-driven businesses such as hotels, which benefit from the high volume of tourist traffic. Currently, there are approximately 2,700 commercial/institutional accounts. The commercial/institutional sector accounts for approximately 25 percent of the City's water consumption.
- **Industrial Sector**  
The City contains a relatively small industrial sector including manufacturing. Currently, there are two industrial accounts. The industrial sector utilizes approximately less than one percent of the City's water demand.
- **Landscape Irrigation Sector**  
This sector only includes water usage from dedicated irrigation meters. Water used for irrigation on properties without separate irrigation meters is included in other sectors. The City's landscape metered uses include assessment districts, contract parks, City parks, cemeteries, median strips, golf courses and other irrigation areas. The landscape irrigation sector accounts for approximately three and a half percent of the City's water consumption.

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<sup>8</sup> Account quantities and consumption percentages are derived from the 2020 Water Deliveries Report.

- **Other Uses**

The City has other miscellaneous usage, which include the following: fireline consumption, temporary construction meters, fire training. This usage is estimated to be one percent of the total water demand.

- **Recycled Water**

The City provides recycled water delivered from the City's Water Reclamation Facility for general irrigation at two golf courses, a City park, and landscape irrigation along the existing distribution alignment. This usage accounts for approximately four percent of total water demand<sup>9</sup>.

- **Water Loss**

Water loss is estimated based on a comparison of billing records (consumption) versus production records and does not include recycled water in this report. Based on City historical information it is estimated at approximately 5 to 10 percent of total produced water since 2005. The City of San Buenaventura reviewed apparent loss (loss due to meter inaccuracies) and real loss (due to leaks or theft) from 2015 to 2019 using AWWA's Water Audit Software. The software estimates water loss average of 7.61%. The 2019 Water Loss Audit Report is provided in Appendix E.

## 2.2 Historical Water Use

Currently the City has approximately 32,285 service connections serving 113,500 people<sup>10</sup>. All service connections are metered. Water consumption within the City has decreased in recent years. The annual per capita usage from 1940 to 1970 averaged about 277 gallons per capita per day (GPCD). In the period 1985 through 1989, the annual per capita use averaged about 196 GPCD. In the period 1994 through 2010, the per capita figure dropped to an average of 166 GPCD. This decrease in per capita consumption is the result of plumbing code changes such as low flow fixtures and low water consuming appliances in some existing and all new housing; and an active water conservation program adopted by the City in 1975 and further strengthened with regulations in 1990. As detailed in Section 2.4, the baseline GPCD for the 10-year period was 176 and the baseline GPCD for the 5-year period was 167. In 2015 the reported GPCD was 159. In 2020 the reported GPCD was 104.

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<sup>9</sup> Recycled water consumption percentage from the 2021 CWRR.

<sup>10</sup> This population estimate is based on input from the 2021 Comprehensive Water Resources Report. Current (2020) population as estimated by the DWR Population Tool (described in section 2.3.20) 115,815. Calculations for compliance with gpcd targets uses the DWR Population Tool estimates.

**TABLE 2-1  
DEMANDS - ACTUAL 2020**

| <b>Use Type</b>                                                  | <b>Level of Treatment</b> | <b>Volume (AF)</b> |
|------------------------------------------------------------------|---------------------------|--------------------|
| Single family                                                    | Drinking Water            | 5,489              |
| Multi-family                                                     | Drinking Water            | 3,443              |
| Commercial/Institutional                                         | Drinking Water            | 3,219              |
| Irrigation                                                       | Drinking Water, Untreated | 380                |
| Other                                                            | Drinking Water            | 160                |
| Water Loss <sup>1</sup>                                          | Drinking Water, Untreated | 865                |
| <i>Total Potable and Untreated Water Production <sup>2</sup></i> |                           | <b>13,556</b>      |
| Recycled Water                                                   | Recycled Water            | 564                |
| <b>Total Water Demand</b>                                        |                           | <b>14,120</b>      |

Notes:

2020 demand from billing records = 12,746 AF (excludes recycled water)

2020 production from production report = 13,556 AF (excludes recycled water)

<sup>1</sup> 2020 production minus 2020 demand (excludes recycled water)

<sup>2</sup> From production source report (does not include recycled water)

## 2.3 Water Loss

Distribution system water losses is the physical potable water losses from the pressurized water distribution system. Ventura Water estimates its distribution system loss using the American Water Works Association Method, annually. As required, Ventura Water reports information on water losses annually to the State. Table 2-2 reports water loss estimates 2015 to 2019. The Water Loss Audit Reports submitted to the State for these years is provided in Appendix E.

**TABLE 2-2  
ESTIMATED WATER LOSS 2015-2019**

| <b>Period Covered</b> | <b>Estimated Water Loss (AF)</b><br>(volume of apparent and real water losses) | <b>% of Water Produced</b> |
|-----------------------|--------------------------------------------------------------------------------|----------------------------|
| Calendar Year 2015    | 1,449                                                                          | 10.1                       |
| Calendar Year 2016    | 933                                                                            | 6.8                        |
| Calendar Year 2017    | 1,122                                                                          | 8.4                        |
| Calendar Year 2018    | 620                                                                            | 4.6                        |
| Calendar Year 2019    | 1,079                                                                          | 8.3                        |

At the current time a water loss standard has not been adopted by the State of California. Future UWMPs prepared by Ventura Water will report on compliance with any State water loss standards.

## 2.4 Existing and Target Per Capita Water Use

As required by SB X7-7, the Water Conservation Bill of 2009, this section identifies the water use targets in 2015 and 2020 to demonstrate a 20% reduction in per capita water use by 2020. Included are calculations of the baseline gross water use expressed as per capita daily water use (gallons per capita per day, or GPCD), baseline and target population, and year 2020 urban

water use target. This section includes a description of how Ventura Water calculated its baseline and target per capita water demands, in accordance with Method No. 1 described in "Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use" (DWR Methodologies, 2011). Ventura Water has completed the SB X7-7 Verification Form, attached as Appendix F, and summarized in Tables 2-4 and 2-5 of this chapter.

#### 2.4.1 Base Daily Per Capita Water Use for SBX7-7 Reduction

Two baseline periods are to be determined during the calculation of the base daily per capita water use. The first is a continuous 10- to 15-year period used to calculate baseline per capita use, and the second is a continuous 5-year period used to determine whether the 2020 per capita water use target meets the legislation's minimum water use reduction requirements of at least a 5% reduction per capita water use.

The legislation allows the first continuous baseline period to increase from a 10-year to a 15-year base period if the amount of recycled water delivered in 2008 was 10% or greater of total water demand. Ventura Water's recycled water use in 2008 did not meet 10% or greater total water demand; therefore, under the legislation, Ventura Water may not use anything greater than a 10-year base period.

Tables 2-3 and 2-4 summarize the Base Daily Water Use calculation for Ventura Water. As a part of the SB X7-7 requirements, both a 10-year base period and a 5-year base period were selected in the 2010 UWMP, and were not able to be altered after having been selected. Years 1995 to 2004 were selected for calculation of the 10-year base period while years 2003 to 2007 were selected for calculation of the 5-year base period.

**TABLE 2-3  
BASELINE PERIOD RANGES**

| Baseline                         | Parameter                                            | Value  | Units   |
|----------------------------------|------------------------------------------------------|--------|---------|
| 10 to 15 year<br>baseline period | 2008 total water deliveries                          | 19,234 | AFY     |
|                                  | 2008 total volume of delivered recycled water        | 625    | AFY     |
|                                  | 2008 recycled water as a percent of total deliveries | 3.2 %  | Percent |
|                                  | Number of years in baseline period <sup>1</sup>      | 10     | Years   |
|                                  | Year beginning baseline period range                 | 1995   | -       |
|                                  | Year ending baseline period range <sup>2</sup>       | 2004   | -       |
| 5 year baseline<br>period        | Number of years in baseline period                   | 5      | Years   |
|                                  | Year beginning baseline period range                 | 2003   | -       |
|                                  | Year ending baseline period range <sup>3</sup>       | 2007   | -       |

Notes:

Data is for Calendar Year

<sup>1</sup>If the 2008 recycled water percent is less than 10 percent, then the first baseline period is a contiguous 10-year period. If the amount of recycled water delivered in 2007 is 10 percent or greater, the first baseline period is a contiguous 10 to 15 year period.

<sup>2</sup> The ending year must be between December 31, 2004 and December 31, 2010.

<sup>3</sup> The ending year must be between December 31, 2007 and December 31, 2010.

As shown in the top portion of Table 2-4, the Ventura Water Baseline GPCD is estimated to be 176. As shown in the second portion of Table 2-4, the Ventura Water 5-year Baseline GPCD is 167.

**TABLE 2-4  
GALLONS PER CAPITA PER DAY**

| Year                                |      | Service Area<br>Population <sup>1</sup> | Gross<br>Water Use<br>(AFY) | Gross Water<br>Use (million<br>gallons a<br>day) | Daily Per<br>Capita<br>Water Use<br>(GPCD) |
|-------------------------------------|------|-----------------------------------------|-----------------------------|--------------------------------------------------|--------------------------------------------|
| 10 to 15 Year Baseline GPCD         |      |                                         |                             |                                                  |                                            |
| 1                                   | 1995 | 96,334                                  | 18,060                      | 16.12                                            | 167                                        |
| 2                                   | 1996 | 97,634                                  | 19,489                      | 17.40                                            | 178                                        |
| 3                                   | 1997 | 98,950                                  | 19,851                      | 17.72                                            | 179                                        |
| 4                                   | 1998 | 100,285                                 | 18,568                      | 16.58                                            | 165                                        |
| 5                                   | 1999 | 101,637                                 | 20,703                      | 18.48                                            | 182                                        |
| 6                                   | 2000 | 103,008                                 | 21,567                      | 19.25                                            | 187                                        |
| 7                                   | 2001 | 103,610                                 | 18,960                      | 16.93                                            | 163                                        |
| 8                                   | 2002 | 104,216                                 | 19,933                      | 17.80                                            | 171                                        |
| 9                                   | 2003 | 104,825                                 | 20,394                      | 18.21                                            | 174                                        |
| 10                                  | 2004 | 105,437                                 | 22,298                      | 19.91                                            | 189                                        |
| 10 to 15 Year Average Baseline GPCD |      |                                         |                             |                                                  | <b>176</b>                                 |
| 5 Year Baseline GPCD                |      |                                         |                             |                                                  |                                            |
| Year                                |      | Service Area<br>Population <sup>1</sup> | Gross<br>Water Use<br>(AF)  | Gross Water<br>Use (million<br>gallons a<br>day) | Daily Per<br>Capita<br>Water Use<br>(GPCD) |
| 1                                   | 2003 | 104,825                                 | 20,394                      | 18.21                                            | 174                                        |
| 2                                   | 2004 | 105,437                                 | 22,298                      | 19.91                                            | 189                                        |
| 3                                   | 2005 | 106,053                                 | 19,594                      | 17.49                                            | 165                                        |
| 4                                   | 2006 | 106,673                                 | 18,149                      | 16.20                                            | 152                                        |
| 5                                   | 2007 | 107,297                                 | 18,926                      | 16.90                                            | 157                                        |
| 5 Year Average Baseline GPCD        |      |                                         |                             |                                                  | <b>167</b>                                 |
| Compliance Year GPCD                |      |                                         |                             |                                                  |                                            |
|                                     | 2020 | 115,815                                 | 13,557                      | 12.1                                             | <b>104</b>                                 |

<sup>1</sup> From DWR Population Tool

#### 2.4.2 2015 and 2020 Targets

The year 2020 target was established in the 2015 UWMP. To assist the reader, this section reviews how the 2020 Target was established.

The City chose to meet SBX7-7 targets as an individual agency rather than as part of a regional alliance. Ventura Water selected Method 3, achieving 95% of the applicable South Coast Hydrologic Region target. The South Coast Hydrologic Region target is 149 GPCD, 95% of this target is 142 GPCD.

The Maximum Allowable GPCD is 95 percent of the 5-year Baseline GPCD or 159. The Compliance Water Use Target, under Method 3 (142 GPCD) is less than the Maximum Allowable GPCD and therefore no adjustments to the Compliance Water Use Target were needed. This makes Ventura Water's Compliance (2020) Water Use Target 142 GPCD. These calculations are summarized in Table 2-5.

**Table 2-5  
2020 Target Compliance**

| <b>10-yr Base<br/>Daily Per<br/>Capita Water<br/>Use (GPCD)</b> | <b>2020 Target<br/>Calculated with<br/>Method 3 (95% of<br/>South Coast<br/>Hydrologic<br/>Region)</b> | <b>5-yr Base<br/>Daily Per<br/>Capita Water<br/>Use (GPCD)</b> | <b>Maximum<br/>Allowed<br/>GPCD<br/>Target (95%<br/>of 5-Year<br/>Base)</b> | <b>Confirmed<br/>2020<br/>Target<br/>(GPCD)</b> |
|-----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-----------------------------------------------------------------------------|-------------------------------------------------|
| 176                                                             | 142                                                                                                    | 167                                                            | 159                                                                         | 142                                             |

### 2.4.3 Achievement of Target

As shown in Table 2-6, the Ventura Water is in compliance with the 2020 Target, with an actual 2020 GPCD of 104. DWR has allowed for optional adjustments to the 2020 GPCD, including extraordinary events, economic adjustments, and weather normalization. Ventura Water made no such adjustments to the 2020 GPCD, as compliance was achieved without these factors.

**Table 2-6  
SBX7-7 2020 Compliance**

| <b>Actual 2020<br/>GPCD</b> | <b>Target<br/>GPCD</b> | <b>Total<br/>Adjustments</b> | <b>Adjusted 2020<br/>GPCD</b> | <b>Did Supplier Achieve<br/>Targeted Reduction for<br/>2020?</b> |
|-----------------------------|------------------------|------------------------------|-------------------------------|------------------------------------------------------------------|
| 104                         | 142                    | 0                            | 142                           | Yes                                                              |

## 2.5 Projected Water Use

The earliest codes and standards for water fixtures and appliances came from the Federal Energy Policy Act of 1992 (taking effect in 1994). Besides Department of Energy (DOE) regulations, the codes and standards affecting water use in California are contained primarily in the CALGreen Building Code, the California Plumbing Code, California Water Code, and California Appliance Efficiency Standards.

The 2010 California Green Building Standards Code (CALGreen) set new standards for the flow rates of plumbing fixtures in new construction. The 2010 CalGreen Code went into effect on January 1, 2011 and its purpose was to reduce indoor water use in California buildings by 20%. The code also required that for buildings over 50,000 sq ft separate water meters be provided (e.g., required that multifamily dwellings have individual rather than master meters). The 2010 CalGreen Building code did have some provisions for outdoor water use including a

requirement for automatic irrigation systems utilizing weather and/or soil moisture-based irrigation controllers and a requirement that new landscapes of a given size conform to water budgets of either local ordinance or the State Model Water Efficient Landscape.

Updates to the CALGreen code in 2012 expanded the scope of CALGreen to include not just new construction but additions and alterations to buildings.

During the 2015-2016 drought, CALGreen was amended to require that new landscapes of a given size conform to water budgets of either local ordinance or the State Model Water Efficient Landscape, whichever is more stringent. In addition, the Code was amended to further reduce the allowable flow rate of faucets and urinals. Subsequently the CALGreen Code was revised to reduce the maximum flow rate of showerheads to align with Appliance Efficiency Regulations. This included a requirement that for all newly constructed residential developments, including hotels and motels, where disinfected tertiary recycled water was available from a municipal source, include provisions for potable water supply and a recycled water supply.

Starting January 1, 2017, California regulation required that upon sale, all single-family, multifamily, and commercial real property disclose all noncompliant plumbing fixtures. Effectively, as a condition of sale, all residential and commercial properties built prior to January 1, 1994, will need to replace all noncompliant plumbing fixtures with water conserving plumbing fixtures including toilets, shower heads, and faucets.

Unlike showerheads, faucets, and toilets, clothes washers are not covered by the California Plumbing Code, but rather regulated by the DOE. The current standards for residential clothes washers took effect in 2018. The standards, which were based on a consensus agreement between manufacturers and efficiency advocates, specify minimum energy and water efficiency levels. The metric for water efficiency is the integrated water factor (IWF), which is expressed in terms of gallons of water consumed per cubic foot of washer capacity. A lower IWF indicates better water efficiency. The standards specify an IWF of 6.5 for top-loading machines and 4.7 for front loading machines. Standard residential clothes washers have a capacity of approximately 4 cubic feet.

The table below summarizes appliance standards over time.

| <b>Fixture and Appliance Standards Over Time</b> |             |             |             |             |             |             |             |             |
|--------------------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                                                  | <b>1975</b> | <b>1980</b> | <b>1992</b> | <b>2009</b> | <b>2011</b> | <b>2013</b> | <b>2016</b> | <b>2018</b> |
| Shower (gpm)                                     | 3.5         | 2.5         | 2.5         | 2.5         | 2.0         | 2.0         | 2.0         | 1.8         |
| Toilets (gpf)                                    | 5.0         | 3.6         | 1.6         | 1.6         | 1.28        | 1.28        | 1.28        | 1.28        |
| Kitchen Faucet/<br>Lavatory<br>Faucet (gpm)      | 2.5         | 2.5         | 2.5         | 2.2         | 1.8         | 1.8/1.5     | 1.8/1.2     | 1.8/1.2     |
| Clothes Washers<br>(gal/cycle/cubic ft)          | 15.0        | 15.0        | 15.0        | 9.5         | 9.5         | 9.5         | 9.5         | 6.5/4.7*    |

Data for 1975 to 2013 from Consol and California Homebuilding Foundation. 2014. Codes and Standards Research Report, California's Residential Indoor Water Use.

Data for 2016 and 2018 from Appliance-Standards.org.

\*top loading machine/front-loading machine

The table above illustrates that there is limited water savings potential in new California homes; existing homes, particularly those built prior to 1980 represent a huge source of potential water savings. Conversely, the age of the housing stock is an indication of the affect that codes and

standards likely have on water demands. If the majority of the housing stock is older, the effect of the codes and standards is limited. If the growth rate of the service area is slow, the effect of codes and standards is also limited.

The City has approximately 42,000 housing units; 70% of which were built before 1980. Since 2014 it is estimated that certificates of occupancy have been issued for less than 1,600 housing units. This means new housing meeting the newest water efficiency standards makes up less than 4% of the residences. However, with rebate programs, natural replacement of old or malfunctioning appliances, retrofit upon resale, or remodels, some of the older housing is likely water efficient.

The water demands for this UWMP utilize water demand factors developed in April 2020, which were used in the 2021 CWRR. These water demand factors have been applied to the existing and anticipated land uses in the Ventura Water service area. The water demand factors looked at billing data for the City, for various uses, for the period 2013 through 2018, a water loss factor was applied to the raw factor, and a planning-level contingency factor was applied to account for variability due to weather and drought. The water demand factors capture changes in demand due to aggressive water conservation and codes and standards that have occurred over time. Because growth in the Ventura Water service area is minimal (approximately 0.54% a year) it is not necessary to apply a different water demand factor to new dwellings. Applying an optimistically “low” water demand factor on new development could skew demand trends when it is uncertain if (a) the development will truly occur and (b) the development will have a truly low water demand.

### 2.5.1 Normal Year

The normal/average year is a year in the historical sequence that most closely represents median runoff levels and patterns. Projected water demands in a normal year are shown in Table 2-7. Table 2-7 provides estimates of demands in each year from 2025 to 2045 assuming growth in the service area consistent with the City General Plan (see Section 1.6) and assuming water demand grows at a similar rate to population. Projections assume similar customer water use as occurred 2015 to 2019.

The water projections in Table 2-7 are based on the City’s annual CWRR. The 2021 CWRR includes demand estimates based only on approved projects that would be fully vested by year 2025 and estimates demands to year 2030 using a growth rate of 0.54 percent. In addition, drought years are included in the baseline demand used in the CWRR. After year 2030 this UWMP assumes growth in demand of 0.54 percent. The projections in Table 2-7 assume a “normal” water year. In a normal water year, it is assumed that Drought Water Rates are no longer in effect and that various drought shortage restrictions are lifted. Demand in dry years is considered in the section below.

**TABLE 2-7  
PROJECTED WATER USE 2025 TO 2045 - NORMAL YEAR (AF)**

| <b>Use Type</b>                                 | <b>2025</b>   | <b>2030</b>   | <b>2035</b>   | <b>2040</b>   | <b>2045</b>   |
|-------------------------------------------------|---------------|---------------|---------------|---------------|---------------|
| Potable and Untreated Water Demand              |               |               |               |               |               |
| Single family                                   | 5,761         | 5,919         | 6,080         | 6,246         | 6,416         |
| Multi-family                                    | 3,614         | 3,712         | 3,814         | 3,918         | 4,025         |
| Commercial/Institutional/Industrial             | 3,378         | 3,471         | 3,565         | 3,663         | 3,763         |
| Parks/Landscape/Irrigation                      | 399           | 410           | 421           | 432           | 444           |
| Other <sup>a</sup>                              | 168           | 173           | 177           | 182           | 187           |
| Water Loss <sup>b</sup>                         | 908           | 933           | 958           | 984           | 1,011         |
| <i>Total Potable and Untreated Water Demand</i> | <i>14,228</i> | <i>14,617</i> | <i>15,015</i> | <i>15,425</i> | <i>15,846</i> |
| Recycled Water                                  | 576           | 576           | 576           | 576           | 576           |
| <b>Total Water Demand</b>                       | <b>14,804</b> | <b>15,193</b> | <b>15,591</b> | <b>16,001</b> | <b>16,422</b> |

Notes:

a Other category includes authorized consumption for miscellaneous uses that do not fit the definition of the above (i.e., oil industry use, temporary construction water, and fire training.

b Water Loss assumed to grow at the same rate as water overall demands

## 2.5.2 Dry Years

## 2.5.3 Weather Effects on Water Usage

Historically, when the weather is hot and dry, water usage increases. The amount of increase varies according to the number of consecutive years of hot, dry weather and the conservation activities imposed. During cool-wet years, historical water usage has decreased to reflect less water usage for external landscaping.

California faces the prospect of significant water management challenges due to a variety of issues including regulatory restrictions, climate change, and population growth. Climate change is of special concern because of the range of possibilities and their potential impacts on water supplies. The most likely scenarios involve accelerated sea level rise and increased temperatures, which will shift more runoff to winter months. The other much-discussed climate scenario or impact is an increase in precipitation variability, with more extreme drought and flood events posing additional challenges to water managers<sup>11</sup>.

However, the probability that water use will increase during dry conditions is countered by conservation actions, including drought rates, that may be implemented by Ventura Water, as has been done in the recent drought events. Over the past decade the water use per person (in GPCD) in the City's service area has seen a consistent decline. Ventura Water has experienced

<sup>11</sup> Final California Water Plan Update 2009 Integrated Water Management: Bulletin 160.

great success in water conservation after implementing multiple customer outreach and customer rebate programs and applying drought rates, as were first implemented in 2014 following a request for a 10 percent voluntary conservation by customers and a subsequent 20% mandatory conservation by customers. In 2015, drought rates were implemented. More information on Ventura Water's demand management programs can be found in Chapter 6 of this UWMP. Table 2-8 projects demands during dry years and it is assumed that demands will increase by 10% in dry periods (Table 2-7).

**TABLE 2-8  
PROJECTED WATER USE 2025 TO 2045 - DRY YEAR (AF)**

| <b>Use Type</b>                                 | <b>2025</b>   | <b>2030</b>   | <b>2035</b>   | <b>2040</b>   | <b>2045</b>   |
|-------------------------------------------------|---------------|---------------|---------------|---------------|---------------|
| <b>Potable and Untreated Water Demand</b>       |               |               |               |               |               |
| Single family                                   | 6,337         | 6,511         | 6,688         | 6,870         | 7,058         |
| Multi-family                                    | 3,975         | 4,083         | 4,195         | 4,309         | 4,427         |
| Commercial/Institutional/Industrial             | 3,716         | 3,818         | 3,922         | 4,029         | 4,139         |
| Parks/Landscape/Irrigation                      | 439           | 451           | 463           | 476           | 489           |
| Other <sup>a</sup>                              | 185           | 190           | 195           | 200           | 206           |
| Water Loss <sup>b</sup>                         | 999           | 1,026         | 1,054         | 1,083         | 1,112         |
| <i>Total Potable and Untreated Water Demand</i> | <i>15,650</i> | <i>16,079</i> | <i>16,516</i> | <i>16,967</i> | <i>17,430</i> |
| Recycled Water                                  | 576           | 576           | 576           | 576           | 576           |
| <b>Total Water Demand</b>                       | <b>16,226</b> | <b>16,655</b> | <b>17,092</b> | <b>17,543</b> | <b>18,006</b> |

Notes:

a Other category includes authorized consumption for miscellaneous uses that do not fit the definition of the above (i.e., oil industry use, temporary construction water, and fire training.

b Water Loss assumed to grow at the same rate as water overall demands

## 2.6 Low Income Projected Water Demands

Senate Bill 1087 requires that water use projections of an UWMP include the projected water use for single-family and multi-family residential housing for lower income households as identified in the housing element of any city, county, or city and county in the service area of the supplier. The City of San Buenaventura last updated its Housing Element in September 2013 for the 2014-2021 5<sup>th</sup> cycle of Regional Housing Needs Assessment (RHNA). The City Housing Element projects that 44 percent of households to be low-income (extremely low/very low/low) (City of San Buenaventura 2013). Despite this, the Housing Element does not provide any information that can be used to develop trends to calculate the associated water demand specific to low -income households in the Ventura Water service area.

Table 2-9 makes an estimate of future low-income household water demands in the Ventura Water service area. Table 2-8 assumes a similar occurrence of low-income households in the water service area as in the City of San Buenaventura (i.e., 40 percent). These demands are included (and are not in addition to) the water demands described in Tables 2-7 and 2-8.

Ventura Water will not deny or condition approval of water services, or reduce the amount of services applied for by a proposed development that includes housing units affordable to lower income households unless one of the following occurs:

- The City specifically finds that it does not have sufficient water supply.
- The City is subject to a compliance order issued by the Division of Drinking Water Services that prohibits new water connections.
- The applicant has failed to agree to reasonable terms and conditions relating to the provision of services.
- The City finds it is not in compliance with the City's current Water Shortage Event Contingency Plan.

**TABLE 2-9  
PROJECTED WATER USE LOW INCOME HOUSEHOLDS (AF)**

| <b>Water Use <sup>a</sup></b>                          | <b>2025</b> | <b>2030</b> | <b>2035</b> | <b>2040</b> | <b>2045</b> |
|--------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| Estimated Low-Income Household Water Use - Normal Year | 4,125       | 4,238       | 4,353       | 4,472       | 4,594       |
| Estimated Low-Income Household Water Use - Dry Years   | 4,537       | 4,662       | 4,788       | 4,919       | 5,053       |

Note:

a Assumes 44 percent all future households in Ventura Water service area qualify as "low" income per the definition provided in Senate Bill 1087.

Pursuant to Government Code Section 65589.7 the City is to grant priority for the provision of water and sewer services to proposed developments that include housing units affordable to lower income households.



## Section 3: Water Resources

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### 3.1 Overview

This section describes the water resources available to the City for the 25-year period covered by the Plan. Both currently available and planned supplies are discussed.

There are presently six distinct water sources providing water to the City water system.

- Casitas Municipal Water District (Casitas)
- Ventura River Foster Park Area (Foster Park)
- Mound Groundwater Basin (Mound Basin)
- Oxnard Plain Groundwater Basin (Oxnard Plain Basin)
- Santa Paula Groundwater Basin (Santa Paula Basin)
- Reclaimed water and reuse from the Ventura Water Reclamation Facility.

In addition, the City has a 10,000 AFY contract amount from the California State Water Project, which is not utilized within the City service area because currently there are no facilities to deliver the water to the City, but it is a planned supply (see Section 3.7.1 below).

#### 3.1.1 Management of Supplies

The City operates its water supply system by utilizing a conjunctive use operating procedure. The procedure involves utilizing surface water (such as the Ventura River) during wet years, to the fullest extent possible, while letting groundwater sources rest. During dry years when the surface water source is reduced, the groundwater sources are pumped to meet demands.

Conjunctive use of the City's existing groundwater sources is limited by the requirement to maintain long-term production from the groundwater basins within their safe or operational yield. Conjunctive use of groundwater requires treatment and blending ratios to meet water quality goals.

Conjunctive use of potential future supply sources may include potable reuse or California State Water Project (SWP) water.

In the future, the City will continue delivering recycled water as occurs now (~576 AFY). The remainder of available recycled water will be delivered to the planned potable reuse facility, VenturaWaterPure.

#### 3.1.2 Consideration of Supplies in Different Hydrologic Conditions

A primary purpose of an UWMP is to identify and quantify water supplies in a normal, single-dry, and multiple-dry years as follows.

- Normal year supply represents the supplies Ventura Water considers available during normal, long-term average conditions.
- The single dry-year supply is the supply anticipated to be available should there be a repeat of past dry conditions. In this UWMP Ventura Water has considered the driest year (for which data is available), by supply source, to estimate the overall single-dry year supply.
- The multiple dry year drought supply considers a five-consecutive-year drought. In this UWMP Ventura Water has evaluated the driest 5-year sequence (for which data is available), by supply source, to estimate supplies in year 1 through year 5 of a drought.

The UWMP Act requires that a supplier compare supplies and demands for these different hydrologic conditions. The UWMP does not try to anticipate specific hydrologic conditions in any particular year, however, the Act does require that a supplier compare supplies and demands assuming a drought extending from year 2021 to 2025. This section of the UWMP goes into details about supplies available in different hydrologic year types, the reader is directed to Section 6 for the comparison of supplies and demands for different hydrologic year types.

## 3.2 Local Surface Water

### 3.2.1 Casitas Municipal Water District (Casitas)

Casitas operates and maintains the Ventura River Project, a part of which is the 238,000 AF capacity storage reservoir known as Lake Casitas. Casitas diverts and stores storm water runoff to Lake Casitas for subsequent filtration treatment and supply of potable water to agricultural and urban uses in western Ventura County. The Casitas service area includes the Ojai Valley, the western part of the City, Oak View, Upper Ojai Valley, and the coastal area between the City and Santa Barbara County.

In July 1995, the City signed an operating agreement with Casitas, establishing the City's minimum annual purchase at 6,000 AFY, which was subject to the allocation program described below during drought periods. In May 2017, the City Council and Casitas Board of Directors 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 (this agreement is provided as Appendix G). The present five-year (FY 09-10 to FY 13-14) average normal (non-drought) water supply from Casitas is estimated to be 5,062 AFY.

The demand from the proposed development projects that are anticipated to be utilizing water by Fiscal Year 2020 are added to the five-year average normal (non-drought) water supply from Casitas of 5,062 AFY. Projects completed since fiscal year 2014 and projects expected to be completed within calendar year 2020 are assumed to be utilizing water in Fiscal Year 2020. The supply from Casitas is estimated to be 5,425 AFY.

Over the last two years, Casitas has been working to develop its Comprehensive Water Resources Plan and update the yield model for Lake Casitas to incorporate more recent data related to storage capacity, diversion efficiency, hydrology, climate change, and other factors. On April 21, 2021, the Casitas Board of Directors directed staff to reduce the available supply yield for the Casitas System from 20,840 acre-feet per year (AFY) to

15,010 AFY for planning purposes. The Board also directed staff to use a planned demand of 15,525 AFY, which is based on average water production for the Casitas System over the last 10 years (Calendar Year 2011-2020). Based on these actions, Casitas plans to adjust the baseline allocations for its customers and update its Water Event Action Plan (WEAP) ahead of the 2022/2023 Fiscal Year. The City of Ventura will coordinate with Casitas-after its WEAP has been updated, to determine if revisions to the 2017 Water Services Agreement are warranted. If adjustments are made to the City's allocation, then this document will be amended at that time.

### **3.2.1.1 Reliability – Water Quality**

Treated surface water from Lake Casitas has historically had levels of disinfection by-products that occasionally exceeded the respective maximum contaminant levels (MCLs) for total trihalomethanes (TTHMs) and haloacetic acids (HAAs). In cases when the levels of TTHMs and HAAs are exceeding or near exceeding the respective MCLs, the City will typically reduce the intake of Casitas water until the issue passes.

Casitas will be implementing potential treatment options to reduce the formation of disinfection by-products in their finished water. In the interim the City will be exploring options at its treatment facility to further reduce the level of disinfection by-products detected in the delivered water.

### **3.2.1.2 Reliability – Other**

No infrastructure issues that may limit planned use of water from Lake Casitas have been identified.

### **3.2.1.3 Reliability – Water Year Type**

The 2017 Water Services Agreement between the City and Casitas 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 Conditions from Casitas Municipal Water District's "Water Efficiency and Allocation Program" dated May 9, 2018

| <b>Stage</b> | <b>Stage Title</b>      | <b>Lake Casitas Storage (%)</b> | <b>Demand Reduction</b> |
|--------------|-------------------------|---------------------------------|-------------------------|
| 1            | Water Conservation      | 100% to 50%                     | 0%                      |
| 2            | Water Shortage Warning  | 50% to 40%                      | 20%                     |
| 3            | Water Shortage Imminent | 40% to 30%                      | 30%                     |
| 4            | Severe Water Shortage   | 30% to 25%                      | 40%                     |
| 5            | Critical Water Shortage | 25% to 0%                       | 50%                     |

As of February 2020, Casitas was in a Stage 3 water supply condition per Casitas Resolution No. 16-00. The lake level as of February 19, 2020 was 41.6 percent full. The Casitas Board of Directors made the decision to remain in a Stage 3 water supply condition in June of 2020.

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 5,425 AFY. A Stage 3 demand reduction of 30% would result in a supply of 3,798 AFY.

Although the Lake is currently slightly above 40% capacity, it is likely that Casitas will remain in a Stage 3 water supply condition. In order to be conservative, this report assumes a reduction of 30% to the City's Casitas supply for the 2021 Supply Drought Impact and a 40% reduction for 2022.

Consistent with the DWR Guidebook, this UWMP evaluates supplies and demands in different hydrologic year types based on past years. For the average year, supply available in 2013 was used; 2014 was selected for the single-dry year; and a repeat of the multi-dry period from 2014-2018 is used to approximate supplies for future long-term droughts. This information is used in coordination with the anticipated WEAP stage and anticipated water demand growth in the portion of the City within Casitas to estimate supply, as reflected in Table 3-1.

**TABLE 3-1  
ESTIMATED SUPPLY FROM CASITAS MUNICIPAL WATER DISTRICT (AFY)**

|                          | <b>2025</b> | <b>2030</b> | <b>2035</b> | <b>2040</b> | <b>2045</b> |
|--------------------------|-------------|-------------|-------------|-------------|-------------|
| Normal Year <sup>1</sup> | 5,805       | 5,963       | 6,126       | 6,293       | 6,465       |
| Single-Dry Year          | 5,805       | 5,963       | 6,126       | 6,293       | 6,465       |
| Multi-Year Drought       |             |             |             |             |             |
| Year 1                   | 5,805       | 5,963       | 6,126       | 6,293       | 6,465       |
| Year 2                   | 4,644       | 4,771       | 4,901       | 5,035       | 5,172       |
| Year 3                   | 4,064       | 4,174       | 4,288       | 4,405       | 4,526       |
| Year 4                   | 4,064       | 4,174       | 4,288       | 4,405       | 4,526       |
| Year 5                   | 4,064       | 4,174       | 4,288       | 4,405       | 4,526       |

<sup>1</sup> Given the current level of Lake Casitas, Normal supplies may not be available even if average rainfall occurs in a specific year.

### 3.2.2 Ventura River

Production from the Ventura River is a function of several factors including diversion capacity, local hydrology, environmental impacts, and the storage capacity of the Ventura River alluvium and upstream diversions. Currently all Ventura River water is collected using surface diversion, subsurface collectors, and shallow wells. A surface intake structure at Foster Park is unused due to the natural channeling of the active river system bypassing the structure.

### **3.2.2.1 Reliability – Water Quality**

Surface water from the Ventura River contains natural organics, which results in the formation of disinfection by-products during the treatment and disinfection processes. Turbid water and high levels of organics, such as after heavy rainstorms, can result in treatment issues and high levels of disinfection by-products in the finished water. During these times, which typically occur during rainy months, water from the Ventura River may be significantly reduced until the water quality improves. The City will be implementing potential treatment options to reduce the formation of disinfection by-products in the finished water.

### **3.2.2.2 Reliability – Other**

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 to a maximum capacity of 4,200 AFY. The 2020-2026 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 during wet years. Therefore, the projected future water supply from the Ventura River / Foster Park is 4,200 AFY.

### **3.2.2.3 Reliability – Water Year Type**

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. The City entered into a settlement with Santa Barbara Channelkeeper in 2019, which was amended in 2020, which requires the City to modify its pumping based on reduced flows in the Ventura River. The current agreement requires the City to turn off the Nye Wells 7 and 8 when the daily average flow rate in the River drops below 4 cubic feet per second (cfs) (for three consecutive days), and to cease operations at the intake facility when flows drop below 3 cfs (for three consecutive days) as measured at the City's stream gauge upstream of Foster Park (VR1). The intake may be shutdown sooner if flows in the River recede quickly.

To evaluate supply into the future, in different year types, historic supply from past years has been evaluated. For the normal year, supply available after 2005 was used; 2015 was selected for the single-dry year; and a repeat of the multi-dry period from 2015-2019 is used to approximate supplies in for future long-term droughts. These supplies have been modified as necessary to reflect assumptions about regulatory and environmental requirements into the future. See Table 3-2.

**TABLE 3-2  
ESTIMATED SUPPLY FROM VENTURA RIVER (AFY)**

|                    | <b>2025</b> | <b>2030</b> | <b>2035</b> | <b>2040</b> | <b>2045</b> |
|--------------------|-------------|-------------|-------------|-------------|-------------|
| Normal Year        | 4,200       | 4,200       | 4,200       | 4,200       | 4,200       |
| Single-Dry Year    | 1,298       | 1,298       | 1,298       | 1,298       | 1,298       |
| Multi-Year Drought |             |             |             |             |             |
| Year 1             | 1,298       | 1,298       | 1,298       | 1,298       | 1,298       |
| Year 2             | 1,298       | 1,298       | 1,298       | 1,298       | 1,298       |
| Year 3             | 1,298       | 1,298       | 1,298       | 1,298       | 1,298       |
| Year 4             | 1,298       | 1,298       | 1,298       | 1,298       | 1,298       |
| Year 5             | 1,298       | 1,298       | 1,298       | 1,298       | 1,298       |

### 3.3 Groundwater

The City obtains water from three groundwater basins, which have historically provided roughly an average of 8,750 AFY (from 2016 to 2020), or 65 percent of the City's total supply. Table 3-3 shows the historical production from these basins. These groundwater basins are described below.

**TABLE 3-3  
HISTORIC GROUNDWATER PRODUCTION (AFY)**

| <b>Basin Name</b>                  | <b>Metered or<br/>Unmetered</b> | <b>2016</b>  | <b>2017</b>  | <b>2018</b>  | <b>2019</b>  | <b>2020</b>  |
|------------------------------------|---------------------------------|--------------|--------------|--------------|--------------|--------------|
| Mound Basin                        | Metered                         | 2,671        | 1,397        | 2,529        | 3,286        | 2,371        |
| Oxnard Plain Basin                 | Metered                         | 3,702        | 3,825        | 3,317        | 3,323        | 3,691        |
| Santa Paula Basin                  | Metered                         | 2,898        | 2,593        | 3,096        | 2,509        | 2,544        |
|                                    | <i>Total</i>                    | <i>9,271</i> | <i>7,815</i> | <i>8,942</i> | <i>9,118</i> | <i>8,605</i> |
| Groundwater as a % of Total Supply |                                 | 67%          | 57%          | 66%          | 70%          | 63%          |

#### 3.3.1 Mound Groundwater Basin

The Mound Groundwater Basin is identified in DWR Bulletin 118<sup>12</sup>, 2003 Update as the Mound Subbasin of the Santa Clara River Valley Groundwater Basin (Basin No. 4-4.03). The basin

<sup>12</sup> Bulletin 118 describes the occurrence and nature of groundwater in California. The publication officially defines groundwater basin boundaries and provides information for each of the State's hydrologic regions. For more information, please see: <https://water.ca.gov/Programs/Groundwater-Management/Bulletin-118>

underlies the northern part of the Ventura coastal plain and is bounded on the north by the Santa Ynez and Topa Topa Mountains, on the south by the Oak Ridge and Saticoy faults, the northeast by the Santa Paula Subbasin, and the west by the Pacific Ocean.

The Mound Basin is designated high-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. The Mound Basin GSA is required to develop a Groundwater Sustainability Plan that establishes the sustainable yield of the Mound Basin by January 2022.

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 pumping 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. The remainder of the available yield is utilized by other basin users.

#### **3.3.1.1 Reliability – Water Quality**

The Mound Groundwater Basin has elevated total dissolved solids (TDS) and sulfate. Ventura Water blends Mound Basin groundwater with other sources to reduce TDS. While City of San Buenaventura water meets all applicable primary standards, City water does have TDS concentrations that exceed secondary standards (standards set for aesthetic, taste, and odor rather than protection of public health). Water quality is not considered a limitation for using supplies from the Mound Groundwater Basin, but the City continues to look for ways to improve the quality, such as blending with future water supply sources.

#### **3.3.1.2 Reliability – Other**

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. Pumping from Victoria Well No. 1, which was installed in 1982, was discontinued due to maintenance and water quality issues. The City recently reached an agreement with the County on deeding to the County its interest in Victoria Well No. 1 and leasing land for drilling of Mound Well No. 2. Construction of Mound Well No. 3 is currently in progress and is scheduled to be in production in 2021. Design of Mound Well No. 2 is also in progress and scheduled to be in production in 2022. Mound Well No. 2 will serve as a replacement well for Victoria Well No. 1; Mound Well No. 3 will serve as a backup well.

Due to operational constraints, recent production from the Mound Basin has been lower than the historical 10-year average. Victoria Well No. 2 was not operational in 2020, so the only well producing water from Mound Basin in 2020 was Mound Well No.1. The City's current water supply from the Mound Basin is the current average production rate of Mound Well No. 1 or

2,400 AFY. In the near future, once Mound Wells No. 2 and 3 are operational, production from the Mound Basin will increase.

#### **3.3.1.3 Reliability – Water Year Type**

The City finalized a study in March to review the perennial yield of the Mound Basin and determine if the annual average yield of the basin is still believed to be accurate. The Report concludes that the perennial yield of the Mound Basin is between 6,600 and 7,400 AFY. While this is consistent with the long-term average production, it is lower than the average production from 2000-2009 (which is used to determine the City's capacity of 4,000 AFY). The Mound Basin GSA will utilize this analysis in conjunction with other information to determine the Sustainable Yield of the Mound Basin as defined by SGMA. This analysis will not be complete until the Groundwater Sustainability Plan is submitted in 2022.

The groundwater basin is managed over the long-term and variations in year-to-year supply are not anticipated at this time. For this reason, the City's anticipated basin yield, in all hydrologic years, is based on "Fugro West, Inc. June 1997. Mound Groundwater Basin Annual Report" and set at 4,000 AFY.

#### **3.3.2 Oxnard Plain Groundwater Basin**

The Oxnard Plain Groundwater Basin is identified in DWR Bulletin 118, 2003 Update as the Oxnard Subbasin of the Santa Clara River Valley Basin (Basin No. 4-4.02), located in southern Ventura County. The basin is bounded on the north by the Oak Ridge fault, the south by the Santa Monica Mountains, the east by the Pleasant Valley and Las Posas Valley Basins, and the west by the Pacific Ocean.

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. Average annual yield from the City's Golf Course wells over the past 5 years has been about 3,500 AFY.

There are limited carryover provisions provided by the FCGMA in the Oxnard Plain Basin that do allow the City to pump less water in wet years and more water in dry years, but all water must be pumped within five years

##### **3.3.2.1 Reliability – Water Quality**

The Oxnard Plain Groundwater Basin has elevated TDS. Ventura Water blends Oxnard Plain Basin groundwater with other sources to reduce TDS. While City of San Buenaventura water meets all applicable primary standards, City water does have TDS concentrations that exceed secondary standards (standards set for aesthetic, taste, and odor rather than protection of public health). Water quality is not considered a limitation for using supplies from the Oxnard Plain Groundwater Basin, but the City continues to look for ways to improve the quality, such as blending with future water supply sources.

##### **3.3.2.2 Reliability – Other**

No infrastructure issues that may limit planned use of water from the Oxnard Plain Groundwater Basin have been identified.

### **3.3.2.3 Reliability – Water Year Type**

The Oxnard Plain Groundwater Basin is managed by the Fox Canyon Groundwater Management Agency (FCGMA), which was created by state legislation in an effort to reduce overdraft and stop seawater intrusion. The FCGMA is the Groundwater Sustainability Agency (GSA) for the Oxnard Plain. The Groundwater Sustainability Plan for the Oxnard Subbasin, provided in Appendix H, was completed in December 2019.

At the October 23, 2019 meeting of the FCGMA Board of Directors, there was a unanimous vote to adopt the ordinance for a new pumping allocation system for the Oxnard and Pleasant Valley basins, effective October 1, 2020. The new well-based allocation will be the average pumping for the base period of 2005-2014. On December 12, 2019, the FCGMA Board voted to repeal portions of some past drought ordinances and this set the City's pumping allocation in the Oxnard Plain Basin to 4,827 AFY effective January 1, 2020.

Neither the allocation ordinance nor the GSP establish the pumping reductions that will take place to meet the sustainable yield for the Oxnard Plain Basin. However, the GSP suggests a linear ramp down from current pumping to the estimated sustainable yield by 2040. Based on these estimates, the City can expect (without additional projects being implemented) its allocation to decrease by 44% by 2040. Therefore, the projected future supply for the Oxnard Plain Basin are projected to decline from 5,304 AFY to 2,970 AFY.

### **3.3.3 Santa Paula Groundwater Basin**

The Santa Paula Groundwater Basin is identified in DWR Bulletin 118, 2003 Update as the Santa Paula Subbasin (Basin No.4-4.04). The basin is bounded on the north by the Topa Topa Mountains, the south by the Oak Ridge and South Mountain, the Oak Ridge fault, and the Saticoy fault, the east by a bedrock constriction, and the west by the Oxnard Plain and Mound subbasins. Water from the Santa Paula Basin is extracted through Saticoy Wells No. 2 and No. 3, with a peak pumping capacity of 3,000 GPM.

The management of the Santa Paula Basin was established under a court stipulated judgment entered in 1996 and amended and restated in 2010 (provided in Appendix I). United, the Santa Paula Basin Pumpers Association and the City are all parties to the Judgement. In summary, the Judgment adjudicates groundwater rights, regulates individual and collective pumping, provides for basin management through a Technical Advisory Committee (TAC), and reserves jurisdiction in the Superior Court to resolve future disputes and provide for supplementary orders as necessary. Because the Santa Paula Basin is already managed per a stipulated judgment, it is exempt from most provisions of SGMA.

The Santa Paula Basin Judgment allows the City to utilize 3,000 AFY. The City is not limited to this allocation in any single year but may produce seven times its average annual allocation (21,000 AF) over any running seven-year period. In addition, the City has acquired water rights in the amount of 126 AFY, bringing its current total allocation to 3,126 AFY.

#### **3.3.3.1 Reliability – Water Quality**

The Santa Paula Groundwater Basin has elevated TDS and requires treatment for iron and manganese. Water quality is not considered a limitation for using supplies from the Santa Paula

Basin, but the City continues to look for ways to improve the quality, such as blending in the future with SWP water.

### **3.3.3.2 Reliability – Other**

The City currently relies on Saticoy Well No. 3 for production and utilizes Saticoy Well No. 2 as an occasional back-up supply due to decline in production. The estimated annual production capacity for Well No. 3 is 2,450 AFY. The City is planning to construct replacement well Saticoy Well No. 4, which is anticipated to be producing water in 2025.

### **3.3.3.3 Reliability – Water Year Type**

If the monitoring performed by the TAC determines that groundwater safe yield is being exceeded, then the City may have its pumping allocation reduced. Upon and motion and hearing as prescribed in the Judgment, if the Court finds that the safe yield of the Basin is less than the total pumping allocations, the Judgment describes six “Overdraft” stages and requires reduced production at each stage.

- Stage 1: Affects the pumping allocation of the Santa Paula Basin Pumpers Association and not the City.
- Stage 2: City of San Buenaventura pumping limited to 1,141 AFY.
- Stage 3: City of San Buenaventura pumping limited to 641 AFY.
- Stage 4: City of San Buenaventura pumping limited to 481 AFY.
- Stage 5: City of San Buenaventura allocation is reduced to zero.
- Stage 6: Affects the pumping allocation of the Santa Paula Basin Pumpers Association.

If the above Stages were to go into effect, the City’s allocation from acquired water rights would be reduced proportionally by the same percentage reduction then required by the members of the Santa Paula Basin Pumpers Association. There is also an exception in the Judgment for emergency conditions for the City to reasonably supply public needs.

Based on recent work completed by the technical working group regarding conditions in the Basin, it is projected that no Stage reductions will be implemented even if the drought remains in effect through 2021. It is also projected that under normal conditions, that the allocation will remain at 3,000 AFY with the addition of water rights equaling 126 AF.

The groundwater basin is managed over-long term and variations in year to year supply are not anticipated. For this reason, anticipated basin yield, in all hydrologic years, is based on the original City allocation plus 126 AFY for City acquired water rights.

## **3.4 Groundwater Supplies Normal, Single-Dry and Multiple Dry Year**

Table 3-4 depicts the anticipated groundwater supplies during Normal, Single-Dry, and Multiple Dry Years, by groundwater source.

**TABLE 3-4  
PROJECTED GROUNDWATER SUPPLIES FOR DIFFERENT YEAR TYPES (AFY)**

|                                | 2025          | 2030          | 2035          | 2040          | 2045          |
|--------------------------------|---------------|---------------|---------------|---------------|---------------|
| <b>Normal Year</b>             |               |               |               |               |               |
| Mound Basin                    | 4,000         | 4,000         | 4,000         | 4,000         | 4,000         |
| Oxnard Plain Basin             | 4,813         | 4,199         | 3,584         | 2,970         | 2,970         |
| Santa Paula Basin              | 3,126         | 3,126         | 3,126         | 3,126         | 3,126         |
| <i>Total Normal Year</i>       | <i>11,939</i> | <i>11,325</i> | <i>10,710</i> | <i>10,096</i> | <i>10,096</i> |
| <b>Single-Dry Year</b>         |               |               |               |               |               |
| Mound Basin                    | 4,000         | 4,000         | 4,000         | 4,000         | 4,000         |
| Oxnard Plain Basin             | 4,813         | 4,199         | 3,584         | 2,970         | 2,970         |
| Santa Paula Basin              | 3,126         | 3,126         | 3,126         | 3,126         | 3,126         |
| <i>Total Single-Dry Year</i>   | <i>11,939</i> | <i>11,325</i> | <i>10,710</i> | <i>10,096</i> | <i>10,096</i> |
| <b>Multiple-Dry Years</b>      |               |               |               |               |               |
| Mound Basin                    | 4,000         | 4,000         | 4,000         | 4,000         | 4,000         |
| Oxnard Plain Basin             | 4,813         | 4,199         | 3,584         | 2,970         | 2,970         |
| Santa Paula Basin              | 3,126         | 3,126         | 3,126         | 3,126         | 3,126         |
| <i>Total Multiple-Dry Year</i> | <i>11,939</i> | <i>11,325</i> | <i>10,710</i> | <i>10,096</i> | <i>10,096</i> |

Note:

In multiple dry years additional groundwater may be utilized to meet demands when surface water supplies are reduced (conjunctive use).

### 3.5 Recycled Water and Reuse

Recycled water is a current and future source for Ventura Water. Recycled water is detailed in Chapter 4.

### 3.6 Transfers, Exchanges and Groundwater Banking Programs

Water supplies may be purchased from other water agencies and sources, and the City may explore these opportunities in the future.

As described in Section 3.7.1, the City of San Buenaventura has participated in the SWP turnback pool and exchanged SWP with other State Water Contractors (San Geronio Pass Water Agency). Participation in the turnback pool could be considered a transfer.

City does not participate in any official groundwater banking programs. The City has limited ability to bank groundwater. The limited carryover provisions provided by the FCGMA in the Oxnard Plain Basin does allow the City to pump less water in wet years and more water in dry years, but all water must be pumped within five years. In the Santa Paula Basin, the allocation is based on a seven-year running average, so the City can also pump more in dry years and less in wet years as long as the 7-year total is not exceeded in any given 7-year period.

### 3.7 Planned Water Supply Projects and Programs

Continued new and infill development that is already entitled, along with anticipated future entitlements, will continue to increase overall demand for water in the service area, despite developer contributions to future water supplies through dedication of water rights, implementing extraordinary conservation measures, and/or payment of Water Resource Net Zero fees. Consequently, combined with legal and regulatory requirements on both groundwater and surface water supplies and impacts of climate change, the City has recognized that consumption is nearing available supply and new supply projects need to be implemented. Consistent with Article X, Section 2 of the California Constitution, in order to mitigate the water resource impacts of new or intensified development, it is necessary and desirable for new or intensified development to provide supplemental water resources to the City water system in an amount proportional to the new demand, implement extraordinary conservation measures to offset demand, and/or to pay a water resource fee based upon the cost of obtaining water supplies to meet the demand of new or intensified development. Upon direction from City Council, Ventura Water prepared and evaluated a Water Rights Dedication and Water Resources Net Zero Policy (Net Zero Policy). The Net Zero Policy was developed after months of review and input from the Ventura Water Commission. The City Council adopted the Net Zero Policy in Ordinance 2016-004 and Resolution 2016-027. Revenues from the Net Zero Policy will provide funding for new water supply projects, such as the VenturaWaterPure Program.

Revenues from rates, grants, and loans will finance the following planned supply projects:

- SWP Water
- VenturaWaterPure

Ventura Water has conceptually studied ocean desalination. However, in the Ventura Water Supply Projects Environmental Impact Report (EIR), it was only evaluated at the programmatic level and not the project level of detail. Further evaluation would be required if ocean desalination were pursued as a future supply source.

#### 3.7.1 SWP Water

The City does not physically take SWP Water because it lacks the facilities to do so. However, since at least 1999 has sold, transferred, or exchanged the water to other SWP Contractors. The City has a 10,000 acre-foot per year entitlement from the 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 with an annual entitlement of 5,000 acre-feet each.

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 participated in an advisory vote on November 3, 1992 and selected 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. Since 2018, the City has participated in exchanges with San Geronio Pass Water Agency which allows the City to receive revenue to offset current SWP fixed costs and receive additional SWP in the future. 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 January 23, 2017, City Council authorized an alignment study to determine how the interconnection project could be designed and operated to supply water to serve the regional needs of the City, Calleguas, Casitas Municipal Water District, and United Water Conservation District (United). The final alignment study was completed in 2018, and the environmental review process pursuant to CEQA was commenced.

On August 5, 2019, the City of San Buenaventura City Council voted to certify the State Water Interconnection Project Final Environmental Impact Report. As stated in the Final EIR, 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 and for Calleguas to deliver water to the City during an outage of the City's water supplies. In both outage scenarios, water delivered would be returned by the receiving party to the providing party following the outage. 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 eastern portion of the City, traversing southerly and easterly through unincorporated Ventura County, to the southwestern end of the City of Camarillo. Final design on the Interconnection began in mid-2020 and construction is anticipated to start the end of 2022.

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 a backup supply for the City's other potential, long-term water supply options. Operational details will be developed through the project design and planning process and negotiations with project partners. These details will be reflected in future CWRs and UWMPs when available.

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 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

To improve system water quality, Ventura Water anticipates using approximately 1,300 AF of SWP in any year it is available, but this amount may increase to compensate for deficiencies in other supply sources or decrease based on the amount of SWP that might be available.

While the City of San Buenaventura's SWP entitlement (Table A Entitlement) is 10,000 AFY this amount is not the long-term average supply expected. According to Department of Water Resources, Technical Addendum to the State Water Project Final Delivery Capability Report 2019 (August 26, 2020) Table B-32. Ventura County Watershed Protection District Future Conditions:

- The Long-Term Average delivery of SWP to the City of San Buenaventura will be 54% of the Table A Entitlement (5,400 AFY). So, 5,400 AFY is the assumed SWP Normal Year Supply. The City estimates it will need 1,300 AFY to blend with groundwater to improve water quality. Additional water may be used to rest groundwater sources in wet years or if other sources are unavailable.
- The State Water Project Final Delivery Capability Report is based on hydrology from 1922 to 2003 (e.g., the current modeling does not consider years past 2003, including 2015). The single-dry year delivery was in year 1977 and (had the City of San Buenaventura had a means to take the water) delivery would have been 9% of Table A or 900 AFY – this is the Single-Dry Year Supply, according to the 2020 SWP Delivery Capability Report.
- The driest 5-year period would be if years 1930-1934 were replicated.
  - o In 1930 about 20% of allocation was available, or about 2,000 AF
  - o In 1931 about 33% of allocation was available, or about 3,300 AF
  - o In 1932 about 13% of allocation was available, or about 1,300 AF
  - o In 1933 about 38% of allocation was available, about 3,800 AF
  - o In 1934 about 11% of allocation was available, about 1,100 AF

These amounts may be supplemented based on an agreement with San Geronio Pass Water Agency (SGPWA). In 2018 and 2019, the City executed agreements with SGPWA to exchange its State Water Project Allocation. As a result of these agreements, SGPWA is obligated to return 2,075 AF of water to City by 2030 (Ventura Water 2021).

### **3.7.1.1 Delta Reliance**

In the future, a small portion of the water received by Ventura Water may come from the Sacramento-San Joaquin Delta (Delta). The 2020 UWMP Guidebook describes how urban water suppliers that anticipate participating in or receiving water from a “covered action” related to the Delta should provide information in their 2020 UWMPs to demonstrate consistency with *Delta Plan Policy WR P1, Reduce Reliance on the Delta Through Improved Regional Water*

*Self-Reliance* (Reduced Reliance Policy). DWR has suggested that any entity receiving imported water from the SWP should anticipate being part of a “covered action”.

DWR suggests suppliers do the following to demonstrate consistency with WR-P1:

- *Establish a base period for evaluation of Delta water.* Ventura Water has not taken Delta water directly in the past. Rather Ventura Water has paid for participation in the SWP and in some years participated in the “turnback pool” to recoup some costs or sold/exchanged/transferred to others.
- *Provide data on State Water Project Water received in the past.* No SWP water has been received directly in the past.
- *Provide information on supplier contribution to regional self-reliance (local supplies brought online 2010-2045 in 5-year increments).* Ventura Water has been locally self-reliant for its entire history. To improve local supplies, starting in 2010 Ventura Water developed a recycled water system capable of delivering 700 AFY. Starting in 2025 Ventura Water anticipates producing and utilizing 2,800 AFY advanced treated water (VenturaWaterPure, see section 3.7.2). This has been accompanied with aggressive measures to reduce demand, including public outreach and drought rates. There has been a consistent decline in gallons per capita per day, demonstrating the success of water use efficiency for improving local self-reliance.
- *Project SWP water that will be received by Ventura Water through 2045.* Ventura Water anticipates taking an average of 1,300 AFY SWP starting in year 2025.

Data related to Delta reliance is provided in Appendix J.

### 3.7.2 VenturaWaterPure

The City of San Buenaventura is currently in the planning phases for the proposed VenturaWaterPure Program which includes additional diversion of tertiary treated effluent discharge from the Santa Clara River Estuary to a new proposed Advanced Water Purification Facility (AWPF) for potable reuse. Potable reuse is the proven use of recycled water to supplement drinking water supplies. After years of special studies, environmental assessment, demonstration facility testing, and stakeholder meetings, the City determined the best way to enhance environmental protection while improving local water quality and supply reliability is to divert highly treated wastewater discharges for potable reuse. The final product of this state-of-the-art AWPF would be a new, locally owned source of highly purified drinking water that provides the City of San Buenaventura with a long-term drought resilient water supply solution. On October 14, 2019, the City of San Buenaventura City Council unanimously voted to certify the EIR for the Ventura Water Supply Projects, which included a project level environmental review of the VenturaWaterPure Program. The City is currently working on the next steps on this Program including land acquisition, permitting, final design, and bidding for construction.

Based on the completion of the Special Studies and additional assessments detailed in the Final EIR, the future water supply provided by the VenturaWaterPure Program is projected to be at least 2,800 AFY in Phase 1a and 4,000 AFY in Phase 1b.

### 3.7.3 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.

According to the Ventura Water Supply Projects EIR certified on October 14, 2019, if sufficient water supply is not available from the VenturaWaterPure Program, then the City may need to develop desalination facilities to meet future water supply needs. Phase 2 of the proposed projects would augment water supplies to meet future water needs, including the accommodation of planned growth, either through increasing the amount of recycled water produced, or construction of an ocean desalination facility. This would be accomplished through either the expansion of the AWP as a first option pending regulatory approvals, or, if this option is not approved or does not meet the City's water supply needs, through construction of an ocean desalination facility. Since ocean desalination was only evaluated at a program level in the Ventura Water Supply Projects EIR and environmental impacts were not evaluated in detail, ocean desalination is not quantified as a potential additional future supply source.

## 3.8 Anticipated Water Supply Sources in Normal, Single Dry, and Multiple Dry Years

Table 3-5 shows Ventura Water supplies in 2020. Tables 3-6, 3-7, and 3-8 provide details on supplies anticipated to be available to Ventura Water in average/normal, single-dry, and multiple dry years given existing and planned supplies.

**TABLE 3-5  
WATER PRODUCTION CALENDAR YEAR 2020 (AF)**

| <b>Water Supply Source</b>                    | <b>Volume (AF)</b> | <b>Type</b>    |
|-----------------------------------------------|--------------------|----------------|
| Casitas Municipal Water District <sup>a</sup> | 2,533              | Drinking Water |
| Ventura River <sup>b</sup>                    | 2,417              | Drinking Water |
| Groundwater <sup>c</sup>                      | 8,606              | Drinking Water |
| Recycled Water <sup>d</sup>                   | 564                | Recycled Water |
| <b>Total Supplies</b>                         | <b>14,120</b>      |                |

Notes:

a City records

b See Section 3.2.2.

c See Section 3.3

d See Section 4.1.1

**TABLE 3-6  
WATER SUPPLY ESTIMATES - AVERAGE/NORMAL YEAR (AF)**

| <b>Water Supply Source</b>                    | <b>2025</b>   | <b>2030</b>   | <b>2035</b>   | <b>2040</b>   | <b>2045</b>   |
|-----------------------------------------------|---------------|---------------|---------------|---------------|---------------|
| Casitas Municipal Water District <sup>a</sup> | 5,805         | 5,963         | 6,126         | 6,293         | 6,465         |
| Ventura River <sup>b</sup>                    | 4,200         | 4,200         | 4,200         | 4,200         | 4,200         |
| Groundwater <sup>c</sup>                      | 11,939        | 11,325        | 10,710        | 10,096        | 10,096        |
| Recycled Water <sup>d</sup>                   | 576           | 576           | 576           | 576           | 576           |
| SWP Water <sup>e</sup>                        | 1,300         | 1,300         | 1,300         | 1,300         | 1,300         |
| Planned Potable Reuse <sup>f</sup>            | 0             | 2,800         | 4,000         | 4,000         | 4,000         |
| <b>Total Supplies <sup>g</sup></b>            | <b>23,820</b> | <b>26,164</b> | <b>26,912</b> | <b>26,465</b> | <b>26,637</b> |

a See Table 3-1

b See Table 3-2

c See Table 3-4

d See Section 4.1

e See Section 3.7. The City estimates it will need 1,300 AFY to blend with groundwater to improve water quality. Additional water may be used to rest groundwater sources in wet years or if other sources are unavailable.

f See Section 3.7.

g Maximum supplies do not account for reduction to meet water quality objectives.

**TABLE 3-7  
WATER SUPPLY ESTIMATES - SINGLE-DRY YEAR (AF)**

| <b>Water Supply Source</b>                    | <b>2025</b>   | <b>2030</b>   | <b>2035</b>   | <b>2040</b>   | <b>2045</b>   |
|-----------------------------------------------|---------------|---------------|---------------|---------------|---------------|
| Casitas Municipal Water District <sup>a</sup> | 5,805         | 5,963         | 6,126         | 6,293         | 6,465         |
| Ventura River <sup>b</sup>                    | 1,298         | 1,298         | 1,298         | 1,298         | 1,298         |
| Groundwater <sup>c</sup>                      | 11,939        | 11,325        | 10,710        | 10,096        | 10,096        |
| Recycled Water <sup>d</sup>                   | 576           | 576           | 576           | 576           | 576           |
| SWP Water <sup>e</sup>                        | 900           | 900           | 900           | 900           | 900           |
| Planned Potable Reuse <sup>f</sup>            | 0             | 2,800         | 4,000         | 4,000         | 4,000         |
| <b>Total Supplies<sup>g</sup></b>             | <b>20,518</b> | <b>22,862</b> | <b>23,610</b> | <b>23,163</b> | <b>23,335</b> |

a See Table 3-1

b See Table 3-2

c See Table 3-4

d See Section 4.1

e See Section 3.7. In a single dry year its estimated that the SWP will be able to supply up to 900 AF, SWP supply may be used in-lieu of groundwater or other supplies when available and when those supplies are, or are expected to be, reduced. This table represents a dry-year scenario where other supplies are reduced and hence use of SWP supplies is assumed.

f See Section 3.7.

g Maximum supplies do not account for reduction to meet water quality objectives.

**TABLE 3-8  
WATER SUPPLY ESTIMATES - MULTIPLE-DRY YEARS (AF)**

| Water Supply Source                                                                                                                                                                                                                                                                                                                                                                                 | 2025   | 2030   | 2035   | 2040   | 2045   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------|--------|--------|--------|
| <b>Casitas Municipal Water District <sup>a</sup></b>                                                                                                                                                                                                                                                                                                                                                |        |        |        |        |        |
| Year 1                                                                                                                                                                                                                                                                                                                                                                                              | 5,805  | 5,963  | 6,126  | 6,293  | 6,465  |
| Year 2                                                                                                                                                                                                                                                                                                                                                                                              | 4,644  | 4,771  | 4,901  | 5,035  | 5,172  |
| Year 3                                                                                                                                                                                                                                                                                                                                                                                              | 4,064  | 4,174  | 4,288  | 4,405  | 4,526  |
| Year 4                                                                                                                                                                                                                                                                                                                                                                                              | 4,064  | 4,174  | 4,288  | 4,405  | 4,526  |
| Year 5                                                                                                                                                                                                                                                                                                                                                                                              | 4,064  | 4,174  | 4,288  | 4,405  | 4,526  |
| <b>Ventura River <sup>b</sup></b>                                                                                                                                                                                                                                                                                                                                                                   |        |        |        |        |        |
| Year 1                                                                                                                                                                                                                                                                                                                                                                                              | 1,298  | 1,298  | 1,298  | 1,298  | 1,298  |
| Year 2                                                                                                                                                                                                                                                                                                                                                                                              | 1,298  | 1,298  | 1,298  | 1,298  | 1,298  |
| Year 3                                                                                                                                                                                                                                                                                                                                                                                              | 1,298  | 1,298  | 1,298  | 1,298  | 1,298  |
| Year 4                                                                                                                                                                                                                                                                                                                                                                                              | 1,298  | 1,298  | 1,298  | 1,298  | 1,298  |
| Year 5                                                                                                                                                                                                                                                                                                                                                                                              | 1,298  | 1,298  | 1,298  | 1,298  | 1,298  |
| <b>Groundwater <sup>c</sup></b>                                                                                                                                                                                                                                                                                                                                                                     |        |        |        |        |        |
| Year 1                                                                                                                                                                                                                                                                                                                                                                                              | 11,939 | 11,325 | 10,710 | 10,096 | 10,096 |
| Year 2                                                                                                                                                                                                                                                                                                                                                                                              | 11,939 | 11,325 | 10,710 | 10,096 | 10,096 |
| Year 3                                                                                                                                                                                                                                                                                                                                                                                              | 11,939 | 11,325 | 10,710 | 10,096 | 10,096 |
| Year 4                                                                                                                                                                                                                                                                                                                                                                                              | 11,939 | 11,325 | 10,710 | 10,096 | 10,096 |
| Year 5                                                                                                                                                                                                                                                                                                                                                                                              | 11,939 | 11,325 | 10,710 | 10,096 | 10,096 |
| <b>Recycled Water <sup>d</sup></b>                                                                                                                                                                                                                                                                                                                                                                  |        |        |        |        |        |
| Year 1                                                                                                                                                                                                                                                                                                                                                                                              | 576    | 576    | 576    | 576    | 576    |
| Year 2                                                                                                                                                                                                                                                                                                                                                                                              | 576    | 576    | 576    | 576    | 576    |
| Year 3                                                                                                                                                                                                                                                                                                                                                                                              | 576    | 576    | 576    | 576    | 576    |
| Year 4                                                                                                                                                                                                                                                                                                                                                                                              | 576    | 576    | 576    | 576    | 576    |
| Year 5                                                                                                                                                                                                                                                                                                                                                                                              | 576    | 576    | 576    | 576    | 576    |
| <b>SWP Water <sup>e</sup></b>                                                                                                                                                                                                                                                                                                                                                                       |        |        |        |        |        |
| Year 1                                                                                                                                                                                                                                                                                                                                                                                              | 2,000  | 2,000  | 2,000  | 2,000  | 2,000  |
| Year 2                                                                                                                                                                                                                                                                                                                                                                                              | 3,300  | 3,300  | 3,300  | 3,300  | 3,300  |
| Year 3                                                                                                                                                                                                                                                                                                                                                                                              | 1,300  | 1,300  | 1,300  | 1,300  | 1,300  |
| Year 4                                                                                                                                                                                                                                                                                                                                                                                              | 3,800  | 3,800  | 3,800  | 3,800  | 3,800  |
| Year 5                                                                                                                                                                                                                                                                                                                                                                                              | 1,100  | 1,100  | 1,100  | 1,100  | 1,100  |
| <b>Planned Potable Reuse <sup>f</sup></b>                                                                                                                                                                                                                                                                                                                                                           |        |        |        |        |        |
| Year 1                                                                                                                                                                                                                                                                                                                                                                                              | 0      | 2,800  | 4,000  | 4,000  | 4,000  |
| Year 2                                                                                                                                                                                                                                                                                                                                                                                              | 0      | 2,800  | 4,000  | 4,000  | 4,000  |
| Year 3                                                                                                                                                                                                                                                                                                                                                                                              | 0      | 2,800  | 4,000  | 4,000  | 4,000  |
| Year 4                                                                                                                                                                                                                                                                                                                                                                                              | 0      | 2,800  | 4,000  | 4,000  | 4,000  |
| Year 5                                                                                                                                                                                                                                                                                                                                                                                              | 0      | 2,800  | 4,000  | 4,000  | 4,000  |
| <b>Water Available In Multiple Year Drought <sup>g</sup></b>                                                                                                                                                                                                                                                                                                                                        |        |        |        |        |        |
| Year 1                                                                                                                                                                                                                                                                                                                                                                                              | 21,618 | 23,962 | 24,710 | 24,263 | 24,435 |
| Year 2                                                                                                                                                                                                                                                                                                                                                                                              | 21,757 | 24,070 | 24,785 | 24,305 | 24,442 |
| Year 3                                                                                                                                                                                                                                                                                                                                                                                              | 19,177 | 21,473 | 22,172 | 21,675 | 21,796 |
| Year 4                                                                                                                                                                                                                                                                                                                                                                                              | 21,677 | 23,973 | 24,672 | 24,175 | 24,296 |
| Year 5                                                                                                                                                                                                                                                                                                                                                                                              | 18,977 | 21,273 | 21,972 | 21,475 | 21,596 |
| <div> <div>a See Table 3-1</div> <div>b See Table 3-2</div> <div>c See Table 3-4</div> <div>d See Section 4.1</div> </div> <div> <div>e See Section 3.7. Because other supplies are likely to be reduced in multi-year drought use of SWP water is assumed.</div> <div>f See Section 3.7.</div> <div>g Maximum supplies do not account for reduction to meet water quality objectives.</div> </div> |        |        |        |        |        |

### 3.9 Energy Intensity of the City of San Buenaventura's Water System

Water energy intensity is the amount of energy, calculated on a whole-system basis, required for use of water in a specific location, such as the Ventura Water service area. DWR provides guidance for calculating the operational energy intensity of water, defined as the total amount of energy expended by the urban water supplier on a per AF basis to take water from the location where the urban water supplier acquires the water to its point of delivery. DWR requires that urban water suppliers only report the energy intensity associated with water management processes occurring within their operational control and not include energy embedded in water supplies purchased from a wholesale water agency. Table 3-9 below provides an estimate, using the total utility approach, of the water energy intensity of Ventura Water's potable water system. DWR's Energy Intensity spreadsheet is provided in Appendix K.

**Table 3-9**  
**Energy Intensity Ventura Water Potable Water Supply -Total Utility Approach**

|                                       |           | <b>Sum of All Water Management Processes</b> | <b>Non-Consequential Hydropower</b> |                    |
|---------------------------------------|-----------|----------------------------------------------|-------------------------------------|--------------------|
| Start Date for Reporting              | 10/1/2017 |                                              |                                     |                    |
| End Date for Reporting                | 9/30/2018 | <i>Total Utility</i>                         | <i>Hydropower</i>                   | <i>Net Utility</i> |
| Volume of Water Entering Process (AF) |           | 13850.54                                     | 0                                   | 13850.54           |
| Energy Consumed (kWh)                 |           | 10,042,668                                   | 0                                   | 10,042,668         |
| Energy Intensity (kWh/MG)             |           | 2225.2                                       | 0                                   | 2225.2             |

## Section 4: Recycled Water and Reuse

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This section of the Plan describes the existing and future recycled water opportunities available to the City service area. The description includes estimates of potential supply and demand for 2020 to 2045 in five-year increments, as well as the City's incentives and optimization plan.

### 4.1 Recycled Water Planning

The City has access to recycled water supply through the Ventura Water Reclamation Facility (VWRF). The City has sole ownership in the wastewater treatment and water recycling facilities in its service area. Currently, the VWRF discharges most of its tertiary treated effluent to the Santa Clara River Estuary with approximately 576 AFY diverted as recycled water for landscape irrigation.

The City has been planning a potable reuse facility to increase their recycled water supply. The City began planning for the VenturaWaterPure facility in 2015 and has since nearly completed the planning phase. As such, the City is not planning to expand their recycled water system beyond this but will continue to deliver the recycled water that they have historically delivered from the VWRF.

#### 4.1.1 Wastewater Collection and Treatment

The VWRF is permitted at 14 million gallons per day (MGD) and discharges up to 9 MGD. The VWRF currently discharges an average of 6.6 MGD. The VWRF provides wastewater collection and treatment service for approximately 98 percent of City residences as well as McGrath State Beach Park and the North Coast Communities (County Service Area No 29). In February 2016, the City took over sewer service for the formerly unincorporated Montalvo community served by Montalvo Community Services District. The VWRF produces recycled water that is treated to tertiary Title 22 standards through tertiary filtration and disinfection. Currently, approximately 6 percent of the treated effluent is reused as recycled water; the rest is discharged to the SCRE.

The City's wastewater collection system consists of approximately 290 miles of sewer pipelines ranging in size from 4 to 42 inches, 11 wastewater lift stations, and the VWRF, a tertiary treatment plant. In addition, the City has recently taken over the 7.5 miles of sewer mains formerly owned by the Montalvo Community Services District. The collection system conveys flows generally from east to west and north to south, culminating at the VWRF for treatment.

The City first provided a municipal sewer system more than a century ago. In 1888, this system extended from Crimea Street west to the Ventura River and from the Pacific Ocean north to Ramona Street. The City later built and operated a primary treatment facility that included an ocean outfall at the foot of Figueroa Street between 1929 and 1959. At that time the outfall was abandoned, and the treatment plant replaced with a pump station, which delivered all wastewater flow from the western portion of Ventura through a 3-mile force main to the VWRF. The VWRF, at 1400 Spinnaker Drive, was constructed in 1958 as a 4 MGD secondary treatment facility utilizing trickling filters. The facility is located on the north bank of, and discharges treated effluent to the SCRE. The facility has provided reclaimed water since the

1970's to the City owned Olivas Park Municipal Golf Course approximately one-quarter mile east of the treatment plant. In 1972 the facility was expanded with the addition of a 10 MGD Activated Sludge treatment process. At that time tertiary filters were also constructed to provide filtered effluent for both reclamation and discharge to the SCRE. Subsequent facility construction projects have added solids treatment, nutrient removal, improved chloramine contact and expanded reclamation pumping and distribution facilities.

Table 4-1 documents wastewater collection in 2020; Table 4-2 documents wastewater treatment and discharge in 2020.

**TABLE 4-1  
WASTEWATER COLLECTED WITHIN SERVICE AREA 2020 (AF)**

| Name of Wastewater Collection Agency | Wastewater Volume Metered or Estimated? | Volume of Wastewater Collected in 2020 | Name of Agency Receiving Collected Wastewater | Treatment Plant Name               | Is WWTP Located Within UWMP Area? | Is WWTP Operation Contracted to a Third Party? |
|--------------------------------------|-----------------------------------------|----------------------------------------|-----------------------------------------------|------------------------------------|-----------------------------------|------------------------------------------------|
| City of San Buenaventura             | Metered                                 | 8,108                                  | City of San Buenaventura                      | Ventura Water Reclamation Facility | Yes                               | No                                             |

Note: Currently, approximately 6% of the treated effluent is reused as recycled water, the remaining is discharged to the Santa Clara River Estuary.

**TABLE 4-2  
WASTEWATER TREATED AND DISCHARGED WITHIN SERVICE AREA 2020**

| Wastewater Treatment Plant Name    | Discharge Location/ Method of Disposal | Does the Plant Treat Wastewater Generated Outside the Service Area? | Treatment Level |
|------------------------------------|----------------------------------------|---------------------------------------------------------------------|-----------------|
| Ventura Water Reclamation Facility | Discharge to Santa Clara River Estuary | No                                                                  | Tertiary        |

| Wastewater Treated (AF) | Discharged Treated Wastewater (AF) | Recycled Within Service Area (AF) | Recycled Outside of Service Area (AF) |
|-------------------------|------------------------------------|-----------------------------------|---------------------------------------|
| 8,108                   | 7,544                              | 564                               | 0                                     |

### Current Recycled Water Uses

Recycled water from the VWRF is used for general irrigation of two public golf courses, a City park and nearby landscape areas. After the VenturaWaterPure facility is constructed and

operational, the City still plans to provide recycled water from the VWRf for the same irrigation purposes. Existing recycled water uses include:

- Golf courses - Olivas Links Golf Course and Buenaventura Golf Course irrigation
- Parks - Marina Park irrigation
- Others - Landscape irrigation near Olivas Drive and in the Harbor area.

The two golf course customers, Olivas Links Golf Course and the Buenaventura Golf Course, account for approximately 90 percent of the total recycled water. In addition, discharge to the Estuary is also considered a beneficial use of the recycled water. Table 4-3 provides a summary of existing actual recycled water uses compared to the projected values in the 2015 UWMP.

In 2016, in response to the drought, the City increased its efforts to replace potable demand with recycled water demand. The City implemented a program, referred to as the mobile reuse program, whereby commercial and industrial entities and City residents can use a recycled water filling station at the VWRf. The filling station is used by multiple entities such as AERA Energy, the Ventura County Transportation Department, the City of San Buenaventura City Parks Department, and the San Buenaventura State Park, in addition to City residents, for the self-hauling of recycled water for irrigation and dust control. The mobile reuse program was in operation through part of 2020, however, was paused due to the COVID-19 pandemic.

**TABLE 4-3  
2015 UWMP RECYCLED WATER USE PROJECTION  
COMPARED TO 2020 ACTUAL (AF)**

| <b>Beneficial Use Type</b>   | <b>2015 Projection<br/>for 2020 (AF)</b> | <b>Actual 2020 Use<br/>(AF)</b> |
|------------------------------|------------------------------------------|---------------------------------|
| Agriculture                  | 0                                        | 0                               |
| Landscape Irrigation         | 700                                      | 564                             |
| Commercial Use               | 0                                        | 0                               |
| Industrial Use               | 0                                        | 0                               |
| Geothermal/Energy            | 0                                        | 0                               |
| Seawater Intrusion Barrier   | 0                                        | 0                               |
| Recreational Impoundment     | 0                                        | 0                               |
| Wetlands or Wildlife Habitat | 0                                        | 0                               |
| Groundwater Recharge         | 0                                        | 0                               |
| Surface Water Augmentation   | 0                                        | 0                               |
| Direct Potable Reuse         | 0                                        | 0                               |
| Other                        | 0                                        | 0                               |
| <b>Total</b>                 | <b>700</b>                               | <b>564</b>                      |

#### 4.1.2 Potential and Projected Use

Recycled water could be put to potable reuse at the VenturaWaterPure facility. 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 VWRP 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, providing information on operational needs and costs, and the absence of risk to public health and safety. As a result, the City is proceeding with the design of a full-scale AWPF.

#### Other Methods to Expand Recycled Water Use

The City will expand their recycled water use significantly via the VenturaWaterPure facility and is not planning to further expand traditional recycled water use.

#### Projected Recycled Water Demand

Table 4-4 shows the projected recycled water uses including the historic uses for golf course, park, and landscape irrigation (excluding the VenturaWaterPure facility).

**TABLE 4-4  
PROJECTED RECYCLED WATER USES**

| <b>Beneficial Use Type</b>        | <b>2025</b> | <b>2030</b> | <b>2035</b> | <b>2040</b> | <b>2045</b> |
|-----------------------------------|-------------|-------------|-------------|-------------|-------------|
| Agriculture                       | 0           | 0           | 0           | 0           | 0           |
| Landscape Irrigation              | 576         | 576         | 576         | 576         | 576         |
| Commercial Use                    | 0           | 0           | 0           | 0           | 0           |
| Industrial Use                    | 0           | 0           | 0           | 0           | 0           |
| Geothermal/Energy                 | 0           | 0           | 0           | 0           | 0           |
| Seawater Intrusion Barrier        | 0           | 0           | 0           | 0           | 0           |
| Recreational Impoundment          | 0           | 0           | 0           | 0           | 0           |
| Wetlands or Wildlife Habitat      | 0           | 0           | 0           | 0           | 0           |
| Groundwater Recharge              | 0           | 0           | 0           | 0           | 0           |
| Surface Water Augmentation        | 0           | 0           | 0           | 0           | 0           |
| Direct Potable Reuse <sup>a</sup> | 0           | 0           | 0           | 0           | 0           |
| Other                             | 0           | 0           | 0           | 0           | 0           |
| <b>Total</b>                      | <b>576</b>  | <b>576</b>  | <b>576</b>  | <b>576</b>  | <b>576</b>  |

Notes:

a VenturaWaterPure accounted for in Tables 3-6 through 3-8.

#### 4.1.3 Methods to Encourage Recycled Water Use

Ventura Water is focusing efforts on potable reuse through the VenturaWaterPure facility but will encourage customers to continue to participate in the mobile reuse program and will require new construction projects to utilize recycled water for landscape irrigation if located adjacent to a recycled water pipeline.



## Section 5: Water Quality

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The quality of any natural water is dynamic in nature. This is true for surface water and local groundwater. During periods of intense rainfall or snowmelt, routes of surface water movement are changed; new constituents are mobilized and enter the water while other constituents are diluted or eliminated. The quality of water changes over the course of a year. These same basic principles apply to groundwater. Depending on water depth, groundwater will pass through different layers of rock and sediment and leach different materials from those strata. Water depth is a function of local rainfall and snowmelt. During periods of drought, the mineral content of groundwater increases. Water quality is not a static feature of water, and these dynamic variables must be recognized.

The City's water sources are within current and anticipated Environmental Protection Agency (EPA) and State Water Resources Control Board Division of Drinking Water (DDW) levels for primary water quality standards. Based on current conditions and knowledge, water quality is not anticipated to affect water supply reliability. However, water quality issues are constantly evolving. It is well recognized water quality treatment can have significant costs.

The City's east side receives its water from groundwater wells and has significantly higher levels of TDS and minerals (hardness) compared to the water delivered to the City of San Buenaventura's west end. As such, TDS levels in excess of 1,000 parts per million (ppm) are experienced on a daily basis in the eastern portions of the system. To meet secondary water quality standards, the DDW encourages the City to explore ways to limit TDS levels to 1,000 ppm. At this time, groundwater from multiple wells in both the Mound and Oxnard Plain basins are treated and blended at the Bailey Treatment Plant to achieve the lowest TDS levels possible without sacrificing supplies. Groundwater in the Mound Basin is high in TDS and sulfate. Some portions of the groundwater exceed the sulfate maximum contaminant level (MCL) of 500 ppm, with conditions between 421 and 790 ppm in the distribution system (Ventura Water 2020). To improve TDS water quality additional westside water supplies or treatment of eastside sources will be required (Ventura Water 2020). The initial target is to lower TDS levels in the eastern portion of the system to 1,000 ppm by 2025 with possible further reduction in the future. The City continues to monitor for regulated as well as unregulated contaminants, in the event they are added to the contaminants list in future drinking water standards.

The City is also planning a blending strategy to improve groundwater quality. Some of the City's SWP allocation would help mitigate water quality issues via blending at the Saticoy Conditioning Facility. Water from the VenturaWaterPure facility would also be used to blend water at the Bailey Treatment Plant.



## Section 6: Reliability Planning

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### 6.1 Overview

The Act requires urban water suppliers to assess water supply reliability that compares total projected water use with the expected water supply over the planning period in five-year increments. The Act also requires an assessment for a single dry year and a multiple year drought lasting 5 years. This chapter presents the reliability assessment for the Ventura Water service area.

### 6.2 Normal Water Year

The normal/average year is a year in the historical sequence that most closely represents median runoff levels and patterns. This section summarizes Ventura Water supplies available to meet demands over the 25-year planning period during an average/normal year and compares them to demands for the same period. Assumptions about supplies and demands are provided in Chapters 2 and 3. Table 6-1 demonstrates that with planned supplies (see section 3.7) the City anticipates adequate supplies for years 2025 to 2045 under Normal conditions.

**TABLE 6-1  
COMPARISON OF SUPPLY CAPACITY AND PROJECTED DEMANDS IN  
AVERAGE/NORMAL YEAR (AF)**

|                                               | 2025                | 2030                 | 2035                 | 2040                 | 2045                 |
|-----------------------------------------------|---------------------|----------------------|----------------------|----------------------|----------------------|
| <b>Supplies</b>                               |                     |                      |                      |                      |                      |
| Casitas Municipal Water District <sup>a</sup> | 5,805               | 5,963                | 6,126                | 6,293                | 6,465                |
| Ventura River <sup>a</sup>                    | 4,200               | 4,200                | 4,200                | 4,200                | 4,200                |
| Groundwater <sup>a</sup>                      | 11,939              | 11,325               | 10,710               | 10,096               | 10,096               |
| Recycled Water <sup>a</sup>                   | 576                 | 576                  | 576                  | 576                  | 576                  |
| SWP <sup>a</sup>                              | 1,300               | 1,300                | 1,300                | 1,300                | 1,300                |
| Planned Potable Reuse <sup>a</sup>            | 0                   | 2,800                | 4,000                | 4,000                | 4,000                |
| <b>Total Supplies <sup>b</sup></b>            | <b>23,820</b>       | <b>26,164</b>        | <b>26,912</b>        | <b>26,465</b>        | <b>26,637</b>        |
| <b>Estimated Demands (Table 2-7)</b>          | <b>14,804</b>       | <b>15,193</b>        | <b>15,591</b>        | <b>16,001</b>        | <b>16,422</b>        |
| <b><i>Difference (Supply - Demand)</i></b>    | <b><i>9,016</i></b> | <b><i>10,972</i></b> | <b><i>11,321</i></b> | <b><i>10,465</i></b> | <b><i>10,216</i></b> |
| <b><i>Difference as % of Demand</i></b>       | <b><i>61%</i></b>   | <b><i>72%</i></b>    | <b><i>73%</i></b>    | <b><i>65%</i></b>    | <b><i>62%</i></b>    |

Notes:

a See Table 3-6

b Maximum supplies do not account for potential reductions to meet water quality objectives.

During the Water Commission Meeting on October 27, 2015 the Water Commission determined that it was appropriate to use a supply surplus buffer of 20% for normal hydrological years. The buffer has been used for the purpose of determining water supply needs and capital cost estimates for building or attaining new supply sources that will meet the surplus buffer. Table 6-1 demonstrates that, per Water Commission policy and as a result of the water supply planning conducted over the last 5 years, City water supplies after 2025 will be adequate.

### 6.2.1 Single-Dry Year

The water supplies and demands for the Ventura Water service area over the 25-year planning period were analyzed in the event that a single-dry year occurs. Table 6-2 summarizes the existing and planned supplies available to meet demands during an assumed single-dry year. Table 6-2 anticipates that with the planned supplies coming online after 2025, supplies will be sufficient to meet demands in a single-dry year.

**TABLE 6-2  
COMPARISON OF SUPPLIES AND DEMANDS IN SINGLE-DRY YEAR (AF)**

|                                               | 2025                | 2030                | 2035                | 2040                | 2045                |
|-----------------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| <b>Supplies</b>                               |                     |                     |                     |                     |                     |
| Casitas Municipal Water District <sup>a</sup> | 5,805               | 5,963               | 6,126               | 6,293               | 6,465               |
| Ventura River <sup>a</sup>                    | 1,298               | 1,298               | 1,298               | 1,298               | 1,298               |
| Groundwater <sup>a</sup>                      | 11,939              | 11,325              | 10,710              | 10,096              | 10,096              |
| Recycled Water <sup>a</sup>                   | 576                 | 576                 | 576                 | 576                 | 576                 |
| SWP <sup>a</sup>                              | 900                 | 900                 | 900                 | 900                 | 900                 |
| Planned Potable Reuse <sup>a</sup>            | 0                   | 2,800               | 4,000               | 4,000               | 4,000               |
| <b>Total Supplies <sup>b</sup></b>            | <b>20,518</b>       | <b>22,862</b>       | <b>23,610</b>       | <b>23,163</b>       | <b>23,335</b>       |
| <b>Estimated Demands (Table 2-8)</b>          | <b>16,226</b>       | <b>16,655</b>       | <b>17,092</b>       | <b>17,543</b>       | <b>18,006</b>       |
| <b><i>Difference (Supply - Demand)</i></b>    | <b><i>4,292</i></b> | <b><i>6,208</i></b> | <b><i>6,518</i></b> | <b><i>5,620</i></b> | <b><i>5,329</i></b> |
| <b><i>Difference as % of Demand</i></b>       | <b><i>26%</i></b>   | <b><i>37%</i></b>   | <b><i>38%</i></b>   | <b><i>32%</i></b>   | <b><i>30%</i></b>   |

Notes:

a See Table 3-7

b Maximum supplies do not account for potential reductions to meet water quality objectives.

### 6.2.2 Multiple-Dry Year

The water supplies and demands for Ventura Water's service area over the 25-year planning period were analyzed in the event that a five-year multiple-dry year event occurs. Table 6-3 summarizes the existing and planned supplies available to meet demands during multiple-dry years. Table 6-3 documents that with planned supplies, Ventura Water should be able to meet demands in a multiple-dry year period.

**TABLE 6-3**  
**COMPARISON OF SUPPLIES AND DEMANDS IN MULTIPLE-DRY YEARS (AF)**

|                                      | 2025   | 2030   | 2035   | 2040   | 2045   |
|--------------------------------------|--------|--------|--------|--------|--------|
| <b>Supplies <sup>a, b</sup></b>      |        |        |        |        |        |
| Year 1                               | 21,618 | 23,962 | 24,710 | 24,263 | 24,435 |
| Year 2                               | 21,757 | 24,070 | 24,785 | 24,305 | 24,442 |
| Year 3                               | 19,177 | 21,473 | 22,172 | 21,675 | 21,796 |
| Year 4                               | 21,677 | 23,973 | 24,672 | 24,175 | 24,296 |
| Year 5                               | 18,977 | 21,273 | 21,972 | 21,475 | 21,596 |
| <b>Estimated Demands (Table 2-8)</b> |        |        |        |        |        |
| Year 1                               | 16,226 | 16,655 | 17,092 | 17,543 | 18,006 |
| Year 2                               | 16,226 | 16,655 | 17,092 | 17,543 | 18,006 |
| Year 3                               | 16,226 | 16,655 | 17,092 | 17,543 | 18,006 |
| Year 4                               | 16,226 | 16,655 | 17,092 | 17,543 | 18,006 |
| Year 5                               | 16,226 | 16,655 | 17,092 | 17,543 | 18,006 |
| <b>Difference (Supply - Demand)</b>  |        |        |        |        |        |
| Year 1                               | 5,392  | 7,308  | 7,618  | 6,720  | 6,429  |
| Year 2                               | 5,531  | 7,415  | 7,693  | 6,762  | 6,436  |
| Year 3                               | 2,950  | 4,819  | 5,080  | 4,132  | 3,789  |
| Year 4                               | 5,450  | 7,319  | 7,580  | 6,632  | 6,289  |
| Year 5                               | 2,750  | 4,619  | 4,880  | 3,932  | 3,589  |
| <b>Difference as % of Demands</b>    |        |        |        |        |        |
| Year 1                               | 25%    | 30%    | 31%    | 28%    | 26%    |
| Year 2                               | 25%    | 31%    | 31%    | 28%    | 26%    |
| Year 3                               | 15%    | 22%    | 23%    | 19%    | 17%    |
| Year 4                               | 25%    | 31%    | 31%    | 27%    | 26%    |
| Year 5                               | 14%    | 22%    | 22%    | 18%    | 17%    |

Notes:

a See Table 3-8

b Maximum supplies do not account for potential reductions to meet water quality objectives.

### 6.2.3 Summary of Comparisons

As shown in the analyses above, with planned supplies, Ventura Water has adequate supplies to meet demands during average, single-dry, and multiple-dry years.

## 6.3 Drought Risk Assessment

The Water Code requires that every urban water supplier include in its UWMP, a drought risk assessment for its water service to its customers. This is to benefit and inform the demand management measures and water supply projects and programs to be included in the urban water management plan.

Annually Ventura Water prepares a CWRR. This report will form the basis for the Annual Assessment of shortage (see Appendix L). As part of preparing the CWRR, Ventura Water looks in detail at anticipated supplies and demands for the current year and two future years and also provides longer term projections.

### 6.3.1 Data and Methodologies Used

#### 6.3.1.1 Water Demands

The water demands for this UWMP utilize water demand factors developed in April 2020, used in the 2021 CWRR. These water demand factors have been applied to the existing and anticipated land uses in the Ventura Water service area. The water demand factors looked at billing data for the City, for various uses, for the period 2013 through 2018, a water loss factor was applied to the raw factor, and a planning-level contingency factor was applied to account for variability due to weather and drought. The water demand factors capture changes in demand due to water conservation and codes and standards that have occurred overtime. Because growth in the Ventura Water service area is minimal (approximately 0.54% a year) it is not necessary to apply a different water demand factor to new dwellings. The current water demand factors are used and have been adjusted to account for new dwellings. Applying an optimistically “low” water demand factor on new development could skew demand trends when it is uncertain if (a) the development will truly occur and (b) the development will have a truly low water demand.

To evaluate water demand, Ventura Water has examined current and projected land uses. The land use evaluation started with the current general plan and a summary of built dwelling-units (residential) and square footage (non-residential). Using known development projects constructed since the adoption of the general plan, a summarized total of the existing land use within the City service area through the end of the recent calendar year was developed.

The City of San Buenaventura maintains a database of projects that are in the City's planning process and categorizes the projects as: “In Planning Process,” “In Plan Check,” “Under Construction,” or have “All Planning Approvals.” Ventura Water has evaluated the database for projects that are either “Under Construction,” or have “All Planning Approvals.” In coordination with City Planning, Ventura Water has created a table of the “Under Construction and Approved Projects” anticipated to utilize water in the near term, which is defined as the next five years.

Using the anticipated land uses and the water demand factors Ventura Water has estimated water demands 2021 through 2025 shown in Table 6-11 below.

### 6.3.1.2 Water Supplies

This Drought Risk Assessment looks at all the water supplies anticipated to be available 2021 through 2025, including any limitations due to infrastructure, regulations, and assuming drought conditions.

#### Casitas Municipal Water District

As of February 2020, Casitas is currently in a Stage 3 water supply condition per Casitas Resolution No. 16-00. The current lake level as of February 19, 2020 was 41.6 percent full. The Casitas Board of Directors made the final decision to remain in a Stage 3 water supply condition in June of 2020. The City's calendar year 2020 supply from Casitas was 3,794 AF.

Although the Lake is currently slightly above 40% capacity, it is likely that Casitas will remain in a Stage 3 water supply condition. To be conservative, a reduction of 30% to the City's Casitas supply for 2021 and a 40% reduction for 2022, and a 30% reduction 2023 to 2025 are assumed. However, due to growth in the Casitas service area, there is a slight increase in the amount of water the City is eligible to receive from Lake Casitas. This growth is also accounted for in the anticipated drought supplies shown in Table 6-4.

**TABLE 6-4**  
**ANTICIPATED SUPPLIES FROM CASITAS CONSECUTIVE DRY YEARS 2021-2025 (AF)**

| 2021  | 2022  | 2023  | 2024  | 2025  |
|-------|-------|-------|-------|-------|
| 3,798 | 3,864 | 3,369 | 2,864 | 2,185 |

Notes:

Assumes 30% reduction in supply Years 2021, 2023, 2024, and 2025

Assumes 40% reduction in supply Year 2022

#### Ventura River

Production from the Ventura River is limited by infrastructure, the settlement with Santa Barbara Channelkeeper, and low-flow hydrology as detailed in section 3.2.2 and summarized in Table 6-5 below.

**TABLE 6-5**  
**ANTICIPATED SUPPLIES FROM VENTURA RIVER**  
**CONSECUTIVE DRY YEARS 2021-2025 (AF)**

| 2021 | 2022  | 2023  | 2024  | 2025  |
|------|-------|-------|-------|-------|
| 736  | 1,298 | 1,298 | 1,298 | 1,298 |

Notes:

Assumes repeat of the average two driest years (2015-2016) for year 2021

Assumes repeat of single-driest year (2015) for years 2022-2025

### Groundwater

As described in Sections 3.3 and 3.4, groundwater supplies are anticipated to be reliable sources of supply for the City. Table 6-6 reflects the anticipated supplies. In Table 6-6 a gradual turn-down of supply from the Oxnard Plain subbasin is assumed to account for pumping reductions anticipated as part of implementation of the GSP.

**TABLE 6-6  
ANTICIPATED GROUNDWATER SUPPLIES  
CONSECUTIVE DRY YEARS 2021-2025 (AF)**

|                   | <b>2021</b>   | <b>2022</b>   | <b>2023</b>   | <b>2024</b>   | <b>2025</b>   |
|-------------------|---------------|---------------|---------------|---------------|---------------|
| Mound             | 3,270         | 4,000         | 4,000         | 4,000         | 4,000         |
| Oxnard Plain      | 5,304         | 5,181         | 5,058         | 4,936         | 4,813         |
| Santa Paula Basin | 2,661         | 2,661         | 2,661         | 2,661         | 3,126         |
| <i>Total</i>      | <i>11,235</i> | <i>11,842</i> | <i>11,719</i> | <i>11,597</i> | <i>11,939</i> |

### State Water Project

SWP water is not anticipated to be available in the Ventura Water service area until 2025. For the purposes of the Drought Risk Assessment, it is assumed the SWP is also experiencing a 5-year drought and supply is assumed to be similar to year 1935 hydrology (State Water Project Final Delivery Capability Report 2019 (August 26, 2020) Table B-32), see Table 6-7.

**TABLE 6-7  
ANTICIPATED SWP SUPPLIES  
CONSECUTIVE DRY YEARS 2021-2025 (AF)**

| <b>2021</b> | <b>2022</b> | <b>2023</b> | <b>2024</b> | <b>2025</b> |
|-------------|-------------|-------------|-------------|-------------|
| -           | -           | -           | -           | 1,100       |

Notes:

No delivery infrastructure until 2025. Assumes year 1934 hydrology based on State Water Project Final Delivery Capability Report 2019 (August 26, 2020) Table B-32

### VenturaWaterPure

The VenturaWaterPure Project is planned to be operable in 2025, but may not be producing regular supply until after 2025. Therefore, Table 6-8 does not include supply from VenturaWaterPure. For subsequent years, supply from VenturaWaterPure is estimated to be 2,800 AFY after 2025 and 4,000 AF after year 2030, in all hydrologic year types.

**TABLE 6-8  
ANTICIPATED VENTURAWATERPURE SUPPLIES  
CONSECUTIVE DRY YEARS 2021-2025 (AF)**

| 2021 | 2022 | 2023 | 2024 | 2025 |
|------|------|------|------|------|
| -    | -    | -    | -    | -    |

Recycled Water

As described in Section 4 and reflected in Table 6-9, recycled water is anticipated to provide a reliable 576 AFY of supply.

**TABLE 6-9  
ANTICIPATED RECYCLED WATER SUPPLIES  
CONSECUTIVE DRY YEARS 2021-2025 (AF)**

| 2021 | 2022 | 2023 | 2024 | 2025 |
|------|------|------|------|------|
| 576  | 576  | 576  | 576  | 576  |

Summary All Supplies Consecutive Drought Years 2021-2025

In Table 6-10 below a summary of all anticipated supplies for consecutive drought years is provided. Table 6-11 provides a comparison of supplies and demands assuming consecutive drought 2021-2025.

**TABLE 6-10  
SUMMARY ANTICIPATED SUPPLIES  
CONSECUTIVE DRY YEARS 2021-2025 (AF)**

|                     | 2021   | 2022   | 2023   | 2024   | 2025   |
|---------------------|--------|--------|--------|--------|--------|
| Casitas             | 3,798  | 3,864  | 3,369  | 2,864  | 2,185  |
| Ventura River       | 736    | 1,298  | 1,298  | 1,298  | 1,298  |
| Mound               | 3,270  | 4,000  | 4,000  | 4,000  | 4,000  |
| Oxnard Plain        | 5,304  | 5,181  | 5,058  | 4,936  | 4,813  |
| Santa Paula         | 2,661  | 2,661  | 2,661  | 2,661  | 3,126  |
| Recycled Water      | 576    | 576    | 576    | 576    | 576    |
| State Water Project | 0      | 0      | 0      | 0      | 1,100  |
| VenturaWaterPure    | 0      | 0      | 0      | 0      | 0      |
| <i>Total</i>        | 16,345 | 17,580 | 16,962 | 16,335 | 17,098 |

**TABLE 6-11  
FIVE YEAR DROUGHT RISK ASSESSMENT**

| 2021                                                         | Total  |  | 2024                                                                                                                                                            | Total  |
|--------------------------------------------------------------|--------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Gross Water Use <sup>1</sup>                                 | 15,631 |  | Gross Water Use <sup>1</sup>                                                                                                                                    | 16,223 |
| Total Supplies                                               | 16,345 |  | Total Supplies                                                                                                                                                  | 16,335 |
| Surplus/Shortfall w/o WSCP Action                            | 714    |  | Surplus/Shortfall w/o WSCP Action                                                                                                                               | 112    |
| Planned WSCP Actions (use reduction and supply augmentation) |        |  | Planned WSCP Actions (use reduction and supply augmentation)                                                                                                    |        |
| WSCP - supply augmentation benefit                           | 0      |  | WSCP - supply augmentation benefit                                                                                                                              | 0      |
| WSCP - use reduction savings benefit                         | 0      |  | WSCP - use reduction savings benefit                                                                                                                            | 0      |
| Revised Surplus/(shortfall)                                  | 0      |  | Revised Surplus/(shortfall)                                                                                                                                     | 0      |
| Resulting % Use Reduction from WSCP action                   | 0%     |  | Resulting % Use Reduction from WSCP action                                                                                                                      | 0%     |
|                                                              |        |  |                                                                                                                                                                 |        |
|                                                              |        |  |                                                                                                                                                                 |        |
| 2022                                                         | Total  |  | 2025                                                                                                                                                            | Total  |
| Gross Water Use <sup>1</sup>                                 | 15,828 |  | Gross Water Use <sup>1</sup>                                                                                                                                    | 16,226 |
| Total Supplies                                               | 17,580 |  | Total Supplies                                                                                                                                                  | 17,098 |
| Surplus/Shortfall w/o WSCP Action                            | 1,752  |  | Surplus/Shortfall w/o WSCP Action                                                                                                                               | 872    |
| Planned WSCP Actions (use reduction and supply augmentation) |        |  | Planned WSCP Actions (use reduction and supply augmentation)                                                                                                    |        |
| WSCP - supply augmentation benefit                           | 0      |  | WSCP - supply augmentation benefit                                                                                                                              | 0      |
| WSCP - use reduction savings benefit                         | 0      |  | WSCP - use reduction savings benefit                                                                                                                            | 0      |
| Revised Surplus/(shortfall)                                  | 0      |  | Revised Surplus/(shortfall)                                                                                                                                     | 0      |
| Resulting % Use Reduction from WSCP action                   | 0%     |  | Resulting % Use Reduction from WSCP action                                                                                                                      | 0%     |
|                                                              |        |  |                                                                                                                                                                 |        |
|                                                              |        |  |                                                                                                                                                                 |        |
| 2023                                                         | Total  |  | Notes:                                                                                                                                                          |        |
| Gross Water Use <sup>1</sup>                                 | 16,026 |  | 1. The gross water use value assumes the worst-case scenario of less than 50% of normal rainfall and applies a 10% upward adjustment to the demand projections. |        |
| Total Supplies                                               | 16,962 |  |                                                                                                                                                                 |        |
| Surplus/Shortfall w/o WSCP Action                            | 936    |  |                                                                                                                                                                 |        |
| Planned WSCP Actions (use reduction and supply augmentation) |        |  |                                                                                                                                                                 |        |
| WSCP - supply augmentation benefit                           | 0      |  |                                                                                                                                                                 |        |
| WSCP - use reduction savings benefit                         | 0      |  |                                                                                                                                                                 |        |
| Revised Surplus/(shortfall)                                  | 0      |  |                                                                                                                                                                 |        |
| Resulting % Use Reduction from WSCP action                   | 0%     |  |                                                                                                                                                                 |        |

## Section 7: Demand Management Measures

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### 7.1 Demand Management

The purpose of the Demand Management Measures (DMM) section of this UWMP is to (a) provide a description of the past water conservation programs that Ventura Water has implemented since 2016 to meet its urban water use reduction targets and (b) describe the activities and actions Ventura Water plans to use in the future to meet its urban water use reduction targets. For the purposes of this UWMP the DMMs are categorized as “Foundational” and “Other”. Foundational DMMs, listed below, are those DMMs that the UWMP Act and Water Code specifically mention:

- a. Water waste prevention ordinances
- b. Metering
- c. Conservation pricing
- d. Public education and outreach
- e. Programs to assess and manage distribution system real loss
- f. Water conservation program coordination and staffing support

Activities outside of the Foundational DMMs that encourage less water use in the City service area fall in the “Other DMM” category.

This chapter discusses the DMMs that Ventura Water undertakes as part of normal business. However, given the extraordinary and continuing drought, this chapter also describes those measures that were undertaken specifically to address dry conditions.

#### 7.1.1 Foundational DMMs

##### 7.1.1.1 Water Waste Prohibition

Ventura Water prohibits water waste through its Water Conservation Ordinance (Division 22 – Public Utilities, Chapter 22.170). Specifically, Section 22.170.010 states:

“Water waste prohibited.

A. Prohibited uses. No person shall use or permit the use of water:

- 1. For the watering of turf, ornamental landscape, open ground crops and trees, including agricultural irrigation, in a manner or to an extent which allows water to run to waste;
- 2. Such that the escape of water through leaks, breaks or malfunction within the water user's plumbing or distribution system occurs for any period of time beyond which such break or leak should reasonably have been discovered and corrected. It shall be presumed that a period of 48 hours after the water user discovers such leak, break or malfunction, or receives notice from the city of such

condition, whichever occurs first, is a reasonable time within which to correct such condition;

3. In conjunction with use of a handheld hose to wash automobiles, trucks, trailers, boats, or other types of mobile equipment without the use of a workable positive shutoff nozzle;
4. For the operation of any ornamental fountain, or similar structures, unless water for such use is recycled for lawful reuse without substantial loss;
5. For washing of sidewalks, walkways, driveways, parking lots or any other hard-surfaced areas by hose or flooding, except as otherwise necessary to prevent or eliminate conditions dangerous to the public health and safety or for other legitimate necessity;
6. For serving of water by a restaurant to its customers without first being requested by the customer;
7. The application of potable water to outdoor landscaped during and within 48 hours of measurable rainfall; or
8. Knowingly for any indiscriminate running of water or washing with water not otherwise prohibited above which is wasteful and without reasonable purpose.”

#### **7.1.1.2 Metering**

All existing services and new service connections in the City are metered and billed volumetrically

##### Efforts in 2020

In March 2016, the City Council adopted the Meter Upgrade Project to replace all manually-read water meters with advanced metering infrastructure (AMI) that automatically relay water usage to the City’s billing system through a secured network. The project launched in October 2018, with plans to replace all 32,000 Ventura Water meters by October 2021. To date, the project is 75 percent complete with over 25,000 meters installed.

In April 2020, Ventura Water launched Home Connect, a new online portal that allows Ventura Water customers to track their hourly water usage, set water-use budgets, and receive leak detection notifications for improved water use management. Upon completion, the Meter Upgrade Project is projected to save more than 600 acre-feet of water per year.

#### **7.1.1.3 Conservation Pricing**

All of the City’s retail customers are metered and billed with commodity rates for both water and sewer service. The City does not have any unmetered services and all new connections are metered and billed volumetrically.

##### Efforts in 2020

Every five years, a Cost of Service and Rate Design Study is conducted for the water and wastewater enterprises to ensure fair and equitable rates for all City customers and to generate sufficient revenue to meet operating and capital costs. In response to seasonal drought conditions, the City has periodically adopted and implemented new rate structures. These

events occurred in Fiscal Year (FY) 2012-2013, FY 2014-2015, and FY 2015-2016, in response to water shortage events. New rates were established to achieve full revenue recovery during drought and non-drought years. In May 2020, the City declared a Stage 2 Water Shortage Event, shifting from the Stage 3 Water Shortage Event declared in September 2015 that remained in effect through June 30, 2020. The City is currently conducting a new Water and Wastewater Rate Design Study. If adopted by City Council, new rates will be implemented in July 2021.

#### 7.1.1.4 Public Education and Outreach

Ventura Water has consistently and actively encouraged water conservation through an extensive public education and outreach campaign. Outreach has utilized multiple venues including social media, printed media (bill inserts, handouts), outdoor advertising (billboards), radio, television, hosting of water conservation workshops, participation in community events (parades and street fairs). These outreach activities are summarized in Table 7-1.

**TABLE 7-1  
VENTURA WATER OUTREACH PROGRAMS**

| Action                      | Description                                                                                                                                                                                                                                               | 2016 | 2017 | 2018 | 2019 | 2020 |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|------|------|------|------|
| Monthly E-Newsletter        | The monthly Pipeline Newsletter provides information on capital improvement projects, conservation programs, public meetings, workshops, and special events.                                                                                              | X    | X    | X    | X    | X    |
| Website                     | Ventura Water regularly updates the website with FAQs, public notices, water quality data, water conservation information, public meeting information, project updates, and more.                                                                         | X    | X    | X    | X    | X    |
| Outreach Events             | 15-20 public outreach events per year, consisting of job fairs, City-sponsored events, Chamber of Commerce events, with giveaways and informational handouts.                                                                                             | X    | X    | X    | X    | X    |
| Social Media                | Ventura Water maintains an active and engaged presence on Facebook, Twitter, YouTube, and Instagram.                                                                                                                                                      | X    | X    | X    | X    | X    |
| Public Engagement Materials | Water quality Consumer Confidence Report. Brochures "Protecting our Pipes"; "Understanding Water and Wastewater Charges"; "Customer Assistance Program"; "Water Disaster Preparedness"; and "Fats, Oils, and Grease".                                     | X    | X    | X    | X    | X    |
| Targeted Outreach           | Brochures, annual mailer, postcards, and door hangers.                                                                                                                                                                                                    | X    | X    | X    | X    | X    |
| Conservation Giveaways      | Ventura Water continues to offer customers water conservation giveaways including materials such as "Doing Our Part to Save Water" yard signs, low-flow showerheads, faucet aerators, toilet leak detection kits, shower times, dish squeegees, and more. | X    | X    | X    | X    | X    |

**Table 7-1 cont.**

| <b>Action</b>                                       | <b>Description</b>                                                                                                                                                                                    | <b>2016</b> | <b>2017</b> | <b>2018</b> | <b>2019</b> | <b>2020</b> |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|-------------|
| WaterWise Gardening Series                          | Ventura Water, in partnership with the city's Environmental Sustainability Department, offers monthly workshops that cover water wise and sustainable gardening practices.                            | X           | X           | X           | X           | X           |
| Townhall Meetings/<br>Public Informational Meetings | Ventura Water plans, attends, and hosts public meetings to share water shortage rates information, ordinance changes, and customer programs to provide an opportunity for residents to voice concerns | X           | X           | X           | X           | X           |
| Customer Water Waste Hotline                        | Hotline where customers can report water waste.                                                                                                                                                       | X           | X           | X           | X           | X           |
| Water Take 1                                        | A home grown international short film contest that brings awareness to the value of water.                                                                                                            | X           | X           | X           | X           | X           |

Between September 2016 and July 2018, Ventura Water held nine water conservation contests to bring awareness of saving water during drought periods to the community.

The Ventura Water Outreach team, an assembly of Ventura Water staff who represent the laboratory, the wastewater collections system, the wastewater plant operations, water distribution, and the General Managers office host and attend multiple events to perform face to face public engagement related to drought messaging (see Table 7-2).

#### **7.1.1.5 Programs to Assess and Manage Distribution System Real Loss**

Consistent with Senate Bill 555, Ventura Water conducts a water loss audit each year and provides a report to DWR. For the January to December 2019 period, Ventura Water utilized the Water Audit Methodology (Appendix L of the Guidebook) to estimate both real and apparent water loss. Based on this recent audit, the City estimates that apparent losses (meter inaccuracies) account for about one percent of total water loss; real losses are estimated to be about 7 percent of production. The Water Loss Audit Reports for 2015-2019 are provided in Appendix E.

#### **7.1.1.6 Water Conservation Program Coordination and Staffing Support**

The conservation program is managed by Ventura Water's Management Analyst, who oversees water resources management for the City. Program activities are managed by various City staff as part of their regular assignment, which equates to one full time employee.

**TABLE 7-2  
DROUGHT SPECIFIC OUTREACH PROGRAMS**

|                                                 |                                                               |
|-------------------------------------------------|---------------------------------------------------------------|
| Monthly class<br>March – October<br>2016 - 2019 | Water Wise Gardening Class                                    |
| March 2016 - 2018                               | Wild and Scenic Film Festival                                 |
| March 2016 - 2019                               | Water Take 1 Event                                            |
| April 2016 - 2019                               | AWA Water Symposium                                           |
| April 2016 - 2019                               | Earth Day Ecofest                                             |
| March 2017 –<br>December 2018                   | Channel Islands Native Garden Plant Sale                      |
| April 2017                                      | Pierpont Elementary Earth Day Event                           |
| April 2017                                      | E.P. Foster Earth Day Event                                   |
| May 2016 - 2018                                 | Surf N Suds                                                   |
| July 2017                                       | Smart Sprinkler Controller Workshop                           |
| April 2018                                      | Walk for Water                                                |
| May 2018                                        | Ocean Friendly Garden/Water Conservation Workshop             |
| May 2019                                        | Water Wise Workshop with WDCD                                 |
| August 2019                                     | Summer Open House Event at Ventura Water Reclamation Facility |

### 7.1.2 Other DMMs

#### 7.1.2.1 Wholesale Agency Assistance Programs

Ventura Water will continue to work cooperatively with Casitas Municipal Water District to participate in regional DMM programs, informational groups and projects, determination of the most cost-effective DMMs, and tailoring programs specific to the City. Ventura Water customers that are within the Casitas service area qualify for many conservation incentives, including water audits, free low flow showerheads and aerators, and rebates for high efficiency toilets and washing machines. These conservation opportunities are described at Casitas' website ([www.casitaswater.org](http://www.casitaswater.org)). Water conservation activities undertaken by Casitas in the Ventura Water area are summarized in Table 7-3.

An example of coordination between Ventura Water and Casitas is the Water Wise Incentive Program. The Water Wise Incentive Program is a new regional water conservation program that provides outdoor water use efficiency incentives to customers of Ventura Water, the City of Santa Paula and Casitas Municipal Water District. Starting in 2016, the Water Wise Incentive Program began offering rebates for turf removal, weather-based irrigation controllers, high-efficiency nozzles, and rainwater harvesting and reuse. The City, Casitas, and the City of Santa Paula cooperatively designed the program and successfully pursued grant funding for the project.

**TABLE 7-3**  
**VENTURA WATER PARTICIPATION IN WHOLESALE AGENCY PROGRAMS**

| <b>Description</b>                      | <b>2016</b> | <b>2017</b> | <b>2018</b> | <b>2019</b> | <b>2020</b> |
|-----------------------------------------|-------------|-------------|-------------|-------------|-------------|
| Water Efficiency Surveys                | 72          | 81          | 116         | 94          | 98          |
| High Efficiency Toilets (1.1 gpf)       | -           | -           | -           | 21          | 33          |
| High Efficiency Washing Machine Rebates | 29          | 56          | 14          | 53          | 106         |
| Weather-Based Irrigation Controllers    | 14          | 134         | 130         | 113         | 82          |
| High Efficiency Sprinkler Nozzles       | 873         | 1,629       | 4,465       | 2,578       | 1,205       |
| Instant Hot Water Recirculating Pump    | -           | -           | -           | 227         | 241         |
| Rain Barrel Voucher                     | 295         | 122         | 92          | 109         | 62          |

To date, Ventura Water's Water-Wise program has resulted in an estimated water savings of 104 AFY.

#### **7.1.2.2 Ventura Water Partnerships with Ventura Unified School District**

Since 2009, the City of San Buenaventura Water Department and Environmental Sustainability Division have provided environmental educational programming to Ventura Unified School District in the form of classroom presentations, assemblies, special event participation, special projects and equipment (i.e. recycle bins, composting bins, gardening supplies). Over 30,000 students have received education on water conservation, stormwater pollution prevention and waste reduction.

In 2017, Ventura Water provided financial support and technical staff support to Juanamaria Elementary School and ATLAS Elementary schools for projects and programs that increase recycling, build wildlife habitats, and reduce waste and water consumption.

In 2017, Ventura Water provided financial support and technical staff support to Ventura High School Greener World Action Team for replacing 1,100 square feet of turf with a water wise landscape at Ventura High School.

In 2018, Ventura Water provided financial support and technical staff support to ATLAS Elementary School for implementing a water wise garden on campus.

#### **Green School Program**

Ventura Water offers free education classroom presentations to students in Kindergarten through 12<sup>th</sup> grade. Lesson plans are grade-specific and aligned with Next Generation Science Standards. All lesson plans included hands-on activities, covering topics such as water conservation, water resource management, watershed protection, and more. This program aims to bring awareness of the importance of local water resource management and water conservation as a way of life.

Table 7-4 summarizes the school outreach metrics.

**TABLE 7-4  
SCHOOL OUTREACH METRICS**

|                    | 2016 | 2017  | 2018  | 2019  | 2020 |
|--------------------|------|-------|-------|-------|------|
| # of students      | -    | 6,210 | 5,800 | 4,150 | *    |
| # of presentations | -    | 240   | 234   | 125   | -    |

\*Postponed due to COVID-19.

### Field Trips

Beginning in 2016, Ventura Water partnered with MERITO Foundation, a local-based nonprofit organization dedicated to providing meaningful watershed experiences to multicultural youth and their community. Students, parents, and educators were invited to visit the Ventura Water Reclamation Facility for a day of hands-on science-based learning. Students tour the Ventura Water Reclamation Facility, conduct water quality testing out of Ventura Water's on-site wildlife ponds and assess ecosystem health through bird species identification. Through this field experience, students are exposed to careers in water science and the many roles and responsibilities necessary to sustain a safe and healthy environment. Ventura Water offers free field trips to the reclamation and drinking water treatment plants throughout the school year. Teachers and educators can schedule a field trip on Ventura Water's website. Since 2016, Ventura Water has provided field trips for over 1,600 students.

### **7.1.2.3 Efforts In 2020**

#### WaterWise Turf and Replacement Program

Since 2015, the City has offered \$2 per square foot rebates to qualifying customers that replace their lawn with a water wise landscape. To date, approximately 633 projects have been completed with more than 520,000 square feet of turf removed, resulting in a project water savings of 21 AFY. This program continues to be offered to Ventura Water customers.

#### Mobile Reuse Program

In June 2016, the City launched a Residential Mobile Reuse 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, City Parks, and State Parks utilize the water for landscape irrigation while AERA Energy and the Ventura County Transportation Department utilize the water for dust control mitigation. Benefits of the program include expanded recycled water usage in the City and conservation of potable water. To date, the Residential Mobile Reuse Program has provided over 51 acre-feet in recycled water.

### Enforcement of Water Waste Prohibition

Ventura Water staff continues to monitor and respond to water waste incidents. Residents are encouraged to anonymously report water waste through a website form or by calling Ventura Water Customer Care. City staff investigates an average of 10 water waste incidents per month.

## 7.2 Planned DMMs to Meet Water Use Targets

Ventura Water customers have already achieved demand reductions sufficient to meet SBX7-7 water use targets. Ventura Water will continue to perform Foundational DMMs. These DMMs, expanding opportunities for new recycled water use customers in the service area, as well as potable reuse, will help the City to keep its GPCD within or lower than the SBX7-7 water use targets.

## Section 8: Water Shortage Event Contingency Plan

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Ventura Water has prepared a separate standalone Water Shortage Event Contingency Plan (WSECP), contained in Appendix L. The WSECP was adopted by the City Council on April 26<sup>th</sup>, 2021. This section includes a brief summary of the WSECP and includes the drought risk assessment required by the UWMP Guidelines.

### 8.1 Purpose of the WSECP

The City of San Buenaventura has developed a WSECP to provide guidance if triggering events occur — whether from reduced supply, increased demand, or an emergency declaration — and to identify corresponding actions to be taken during the various stages of a water shortage. The plan includes voluntary and mandatory stages which are intended to be fair to all water customers and users while having the least impact on business, employment, and quality of life for residents.

### 8.2 Annual Assessment

New provisions in Water Code Section 10632.1. require that an urban water supplier such as Ventura Water, conduct an annual water supply and demand assessment (“Annual Assessment”), on or before July 1 of each year, to be submitted to DWR. As part of the WSECP Ventura Water has identified the timeline, staff and outside agency coordination, and other actions necessary to conduct the Annual Assessment.

### 8.3 Shortage Stages

The WSECP describes six water shortage stages corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage.

### 8.4 Water Shortage Response Actions

The WSECP identifies water shortage response actions, including:

- Communication with customers
- Public outreach
- Supply augmentation
- Operational changes
- Customer demand reduction measures (including enforcement)
- Monitoring of production and demand



## Section 9: References

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