

Public Draft

City of Santa Rosa

2025 Urban Water Management Plan







Jointly prepared by

City of Santa Rosa CALIFORNIA

Woodard & Curran

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City of Santa Rosa
CALIFORNIA

DRAFT 2025 Urban Water Management Plan

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Woodard & Curran

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LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ABAG	Association of Bay Area Governments
AF	Acre-Feet
AFY	Acre-Feet Per Year
AMI	Advanced Metering Infrastructure
ASR	Aquifer Storage and Recovery
AWWA	American Water Works Association
BMPs	Best Management Practices
BPU	Board of Public Utilities
CALGreen	California Green Building Standards Code
CalWEP	California Water Efficiency Partnership
CASGEM	California Statewide Groundwater Elevation Monitoring
CDF	California Department of Finance
CEQA	California Environmental Quality Act
cfs	Cubic Feet Per Second
CII	Commercial, Industrial, and Institutional
CIMIS	California Irrigation Management Information System
City	City of Santa Rosa
COE	Corps of Engineers
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
CY	Calendar Year
DDW	Division of Drinking Water
DEIR	Draft Environmental Impact Report
District	Sonoma County Flood Control and Water Conservation District
DMMs	Demand Management Measures
DOF	Department of Finance
DPH	Department of Public Health
DRA	Drought Risk Assessment
DWR	Department of Water Resources
DWR Guidebook	Urban Water Management Plan Guidebook 2020
EFDI	Efficient Fixtures Direct Install
EIS	Environmental Impact Statement
EKI	EKI Environment and Water, Inc.
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
ET	Evapotranspiration

ETo	Reference Evapotranspiration
FERC	Federal Energy Regulatory Commission
GHG	Greenhouse Gas
GMP	Groundwater Master Plan
GPCD	Gallons Per Capita Per Day
gpm	Gallons per Minute
GPSCD	Gallons per Service Connection per Day
GSA	Groundwater Sustainability Agency
GSP	Groundwater Sustainability Plan
HDPE	High-Density Polyethylene
IRWP	Incremental Recycled Water Program
JPA	Joint Powers Agreement
LID	Low Impact Development
LTP	Laguna Wastewater Treatment Plant
MG	Million Gallons
mgd	Million Gallons Per Day
MOU	Memorandum of Understanding
NCEI	National Centers for Environmental Information
NCRWQCB	North Coast Regional Water Quality Control Board
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollution Discharge Elimination System
Ordinance	Water Waste Ordinance No. 3426
P.O.W.E.R.	Public Officials for Water and Environmental Reform
PAD	Pre-application Document
Permit Sonoma	Permit and Resources Management Department
PG&E	Pacific Gas and Electric
PVC	Polyvinylchloride
PVP	Potter Valley Project
PWS	Public Water System
QWEL	Qualified Water Efficient Landscape
Regional System	Santa Rosa Regional Water Reuse System
Restructured Agreement	Restructured Agreement for Water Supply
RPM	Reasonable and Prudent Measures
RUWMP	Regional Urban Water Management Plan
SB	Senate Bill
SB X7-7	Senate Bill Seven of the Senate's Seventh Extraordinary Session of 2009
SGMA	Sustainable Groundwater Management Act
Shortage Methodology	Water Shortage Allocation Methodology

Shortage Plan	Water Shortage Contingency Plan
SMSWP	Sonoma Marin Saving Water Partnership
Sonoma Water	Sonoma County Water Agency
SRPWGMP	Santa Rosa Plain Watershed Groundwater Management Plan
SWRCB	State Water Resources Control Board
ULFTs	Ultra-Low-Flow Toilets
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
UWMP	Urban Water Management Plan
UWMP Act	Urban Water Management Planning Act
WC Act	Water Conservation Act
WELO	Water Efficient Landscape Ordinance
WET	Water Education for Teachers
WSAP	Water Supply Alternatives Plan
WUE	Water Use Efficiency
WWTP	Wastewater Treatment Plant

EXECUTIVE SUMMARY

The purpose of this Executive Summary is to provide an easily understood summary (Lay Description) of the City of Santa Rosa's (City's) 2025 Urban Water Management Plan (UWMP) in compliance with California Water Code (CWC) Section 10630.5:

> *CWC Section 10630.5. Each plan shall include a simple lay description of how much water the agency has on a reliable basis, how much it needs for the foreseeable future, what the agency's strategy is for meeting its water needs, the challenges facing the agency, and any other information necessary to provide a general understanding of the agency's plan.*

The Urban Water Management Planning Act (UWMP Act) requires water suppliers that provide over 3,000 acre feet per year (AFY) or have over 3,000 connections to prepare and submit to the State Department of Water Resources (DWR) an UWMP that spans at least a 20-year planning horizon every 5 years. The State recommends, but does not require, a 25-year planning horizon. The City's 2025 UWMP has been prepared in accordance with the UWMP Act, as defined by the CWC, Division 6, Part 2.6, Sections 10610 through 10656, and the Water Conservation Act of 2009 (WC Act).

The City is a retail water supplier to approximately 56,000 residential and commercial accounts located within Santa Rosa's service area. This 2025 UWMP addresses the City water system and includes a description of the water supply sources, historical and projected water use, and a comparison of water supply to water demands during normal, single dry, and multiple dry years through 2050. It also includes a drought risk assessment for 2026 to 2030.

This 2025 UWMP also addresses water use efficiency legislation, including the City's 2020 water use targets, as required by the WC Act, and documents the City's success in meeting the City's 2020 water use targets.

The fundamental determination of the UWMP is that the City has or will have sufficient water resources to meet the City's projected growth over the next 25 years under all anticipated hydrologic conditions, although customers should expect some demand reductions during dry years to ensure demands align with the City's water supply.

Service Area Overview

The City of Santa Rosa is the largest city between Portland, Oregon and San Francisco, California. Within the City's service area, employment is diversified across the public sector and the service and manufacturing industries, with a broad spectrum of commercial services such as technology, engineering, and construction. The City's climate is influenced by the Pacific Ocean and is divided into wet and dry seasons. Approximately 93 percent of the annual precipitation normally falls during the wet season, October to May, with a large percentage of the rainfall typically occurring during three or four major winter storms.

The City has received the majority of its potable water supply from Sonoma Water (formerly the Sonoma County Water Agency) since the early 1960s. Sonoma Water provides water principally from the Russian River to the majority of the retail water providers in Sonoma County, and to a lesser degree in Marin County. The City also receives water supply from its own groundwater wells and provides recycled water from the Regional Water Reuse System (Regional System) to some urban Santa Rosa irrigators.

The City receives potable surface water from Sonoma Water through a series of turnouts, check valves, and direct connections serving City pump stations along Sonoma Water's Santa Rosa and Sonoma Aqueducts. There are 59 physical connections between the City's distribution system and Sonoma Water's system, including 39 pressure reducing valves, 16 check valves, and 4 pumping stations. The City's major water distribution facilities consist of 652 miles of main, 21 treated water reservoirs, 20 water pump stations (plus one additional station not in use), and one well treatment facility.

Water Use Projections

Chapter 4 of this UWMP discusses the City's future water needs. To determine projected water demands through 2050, the City in conjunction with the other Water Contractors who receive water from Sonoma Water, hired EKI Environment and Water, Inc. (EKI) to perform the demand analysis. The projected demands are based on the forecasted growth rates for population and employment published in 2018 in the Association of Bay Area Governments (ABAG) Plan Bay Area Projections 2040, in context with recent historical population estimates. The projected demands also include implementation of the National Standard Plumbing Code, State Plumbing Code, as well as accounting for authorized unbilled uses (for activities such as firefighting and line flushing) and water losses from the potable water system (real loss from the distribution system and apparent loss due to billing errors, etc.). **Table ES-1** summarizes actual water use for the City in 2025 and demand projections for 2030 through 2050.

TABLE ES-1: TOTAL PROJECTED WATER USE (POTABLE AND NON-POTABLE), AF

Demand Component	2025	2030	2035	2040	2045	2050 [(a)]
Potable Water	16,790	19,613	19,921	20,313	20,765	21,263
Recycled Water	74	140	140	140	140	140
Total Water Use	16,864	19,753	20,061	20,453	20,905	21,403

(a) State law requires suppliers to span a 20-year planning horizon to 2045 for their 2025 UWMPs and recommends, but does not require, a 25-year planning horizon (to 2050). The City chose to use a 25-year horizon for this 2025 UWMP.

(b) 2025 reflects actual consumption, except for real losses, apparent losses, and other authorized unbilled uses which were estimated from the calendar year 2024 water loss audit. 2030-2050 reflect projected demands as described in Appendix D.

Water Conservation Overview

The City has been and continues to be a leader in implementing innovative water conservation programs. Water conservation and demand management are essential elements of the City's long-term water management strategy. The City integrates water conservation into future supply and demand solutions for both the water system and the wastewater treatment/reuse system. The City has received statewide recognition for its robust conservation programs. **Chapter 9** provides additional details about these programs.

Water Supply Characterization

Chapter 6 of this UWMP assesses the City's potable and non-potable water supplies over short-term and long-term planning horizons. It also includes an analysis of the availability of each source through 2050 under the following hydrologic conditions: normal water year, single-dry water year, and a drought lasting five years. It also considers water supplies in a near-term drought (2026-2030) and longer-term issues like climate change and regulatory revisions. The analysis examines each water source separately and then

aggregates the information into a comprehensive picture of the City's current and future water supply reliability.

The City has three existing sources of water supply:

1. Entitlement from Sonoma Water for potable water (**Section 6.1**)
2. Groundwater from City's potable water wells (**Section 6.2**)
3. Recycled water (non-potable) from the Santa Rosa Regional Water Reuse System (**Section 6.3**)

The City receives approximately 95 percent of its potable water supply from Sonoma Water under the provisions of the Restructured Agreement for Water Supply (Restructured Agreement), which was executed in June 2006. Approximately 99 percent of water delivered by Sonoma Water is from surface water sources, with the remainder from groundwater. **Section 6.2** describes the City's entitlement of 29,100 AFY from Sonoma Water in more detail. Sonoma Water anticipates being able to meet the obligation to deliver 29,100 AFY out to 2050 under normal water year conditions. **Chapter 7** discusses dry year conditions and anticipated water supplies in more detail.

The City produces approximately seven percent of its potable water supply from groundwater wells. **Section 6.3** describes in more detail the City's potable wells which can currently provide up to 2,300 AFY. The Santa Rosa Plain groundwater basin and its sub basins have not been identified as overdrafted and are not anticipated to become overdrafted basins. Starting in 2035, the City anticipates being able to produce 3,100 AFY of groundwater under normal and dry water year conditions, and in 2040, up to 4,100 AFY with the addition of new groundwater sources. **Chapter 6** discusses dry year conditions and anticipated groundwater supply in more detail.

The City offsets less than one percent of total demand for potable water in the urban system with recycled water. The City owns and operates the Santa Rosa Regional Water Reuse System (Regional System), which produces recycled water that is approved by the State for non-potable uses. The Regional System recycles nearly all of its treated wastewater, with the majority being used for the Geysers Recharge Project. In recent years, the City's urban water system has used an average of 98 AFY of recycled water for landscape irrigation (2021-2025). The City is not planning to expand the recycled water system within the City water service area for the duration of the planning period of this 2025 UWMP. **Section 6.4** describes in more detail the City's recycled water which can provide up to 140 AFY for urban non-potable uses.

Relying on the Water Supply Alternatives Plan described further in **Chapter 6**, the City has plans to add new sources of water to meet future water demand (**Section 6.9**). Additionally, the City has implemented a robust water conservation program which has reduced water demand over the past 35 years and ensures that future water use is efficient. The City's water conservation programs are discussed in **Chapter 9** and analyzed in the Water Demand Analysis (**Appendix D**).

The City's current and projected water supplies are summarized in **Table ES-2**.

TABLE ES-2: CURRENT AND PROJECTED WATER SUPPLIES, AF

Source	Additional Detail	2025 Actual	2030	2035	2040	2045	2050
Purchased or Imported Water	Potable (contract)	15,846	29,100	29,100	29,100	29,100	29,100
Groundwater (not desalinated)	Potable (City)	1,326	2,300	3,100	4,100	4,100	4,100
Recycled Water	Non-potable (City)	74	140	140	140	140	140
	Total	**17,246**	**32,340**	**33,340**	**33,340**	**33,340**	**33,340**

Water Service Reliability

Chapter 7 of this UWMP describes the long term reliability and vulnerability of the City's potable and non-potable water supplies under varying conditions. It considers the City's ability to meet water needs through 2050 under normal conditions, single-dry year conditions, and a five consecutive dry year period. In addition, this chapter meets the requirement to provide a Drought Risk Assessment (DRA) which considers water supply and demand under the assumption that the next five years (2026-2030) will experience a drought that is hydrologically equivalent to the driest five consecutive years on record. The water service reliability assessment through 2050 and the DRA for 2026-2030 combine the details of the water use analysis in **Chapter 4** and the water supply analysis in **Chapter 6** of this UWMP.

The City's planned and implemented water management tools for increasing the reliability of water supplies through 2050 are also addressed. Shorter term reliability responses for scenarios that may require immediate action during dry periods or a catastrophic supply interruption are addressed in the 2025 Water Shortage Contingency Plan (Shortage Plan) included in **Appendix E**. Ongoing water use efficiency programs that help ensure water is used wisely by customers during all water supply conditions are discussed in **Chapter 9 Demand Management Measures**.

A summary of the water service reliability assessment findings is listed below.

- The City does not anticipate legal, environmental, or water quality factors will affect the reliability of its water supplies within the planning horizon of this UMWP.
- The City anticipates that climate change and drought conditions could result in a reduction of surface water supply[1]. Although the City does not supply surface water directly, it does receive surface water supply from Sonoma Water which is subject to reductions during dry years (seasonal and climatic shortages) pursuant to State Water Board's Decision 1610[2]. When the volume of water stored in Lake Sonoma (total volume 381,000 acre feet (AF); water supply pool 245,000 AF) is less than 100,000 AF prior to July 15th, a 30 percent reduction in diversions from the Russian River is required. Such a reduction in Sonoma Water diversions may result in a reduction in deliveries to the City under the Restructured Agreement.

[1] Sonoma Water 2025 UWMP.
[2] SWRCB Decision 1610 was adopted in April 1986 and specifies minimum streamflow requirements for Sonoma Water's various water rights for diversion, re-diversion, and storage.

- In normal years, water supply will be sufficient to meet increasing demand through 2050.
- In dry five-year periods that are equivalent to the driest five-year period on record (1987-1991), water supply will be sufficient to meet increasing demand through 2050.
- In the immediate five years (2026-2030), water supply will be sufficient to meet demand even if water conditions are equivalent to the driest five-year period on record (1987-1991).
- While supply volumes are shown to exactly meet demand during single dry year water shortages, it is anticipated that additional water would remain stored in Lake Sonoma to meet future demands. Sonoma Water can store 245,000 AF of water supply in Lake Sonoma and can divert up to 75,000 AFY for water supply purposes under current water rights permits.
- In addition, the City's water use efficiency programs have helped ensure water is used wisely by customers during all water supply conditions. These programs have helped the City reduce water use in Santa Rosa by 12,016 AF between 2010 and 2024. Together, with National and State Plumbing codes and building regulations, the City's per capita demand for potable water has decreased 50 percent over the past 35 years, decreasing from 177 GPCD in 1990 to 80 GPCD in 2025. Total water use went down 24 percent, decreasing from 22,494 AF in 1990 down to 17,172 AF in 2025, despite an increase in population of 54 percent. The City's water use efficiency efforts are discussed in more detail in **Chapter 9**.

Water Shortage Contingency Plan

Chapter 8 and **Appendix E** of this UWMP document the City's Water Shortage Contingency Plan (Shortage Plan) that will be used when available supplies are not sufficient to meet normal water demands. A water shortage may occur due to several reasons, such as drought, climate change, regulatory constraints, natural or human caused disasters, and catastrophic events which may occur at any time. The Shortage Plan is the City's operating manual that allows the City Council, staff, and the public to identify and efficiently implement pre-determined steps to manage a water shortage.

Initial recommendations for trigger points determining water shortage conditions on the Russian River system are made by Sonoma Water, and water shortage provisions for the Sonoma Water system are governed by the Restructured Agreement. For the City and the other parties to the Restructured Agreement, the shortage provisions are defined in Section 3.5 of that agreement, and further defined in the Water Shortage Allocation Methodology (Shortage Methodology). Together, these are designed to take into account the demand hardening associated with water conservation. The City continues to implement aggressive water conservation programs and has one of the lowest per capita water uses among all of Sonoma Water's Water Contractors.

To address any future water supply shortages, the City has identified eight water shortage stages and developed corresponding demand reduction measures to address the severity of the supply restriction (see Sections 4 and 5 of the Shortage Plan included in **Appendix F**). The appropriate stage is determined by City staff and elected officials using the procedures and timeline described in Section 3 of the Shortage Plan.

The full Shortage Plan is included in **Appendix F**. The following is a concise summary of the key requirements met by the City's Shortage Plan:

- **Section 1: Introduction** provides an overview of the Shortage Plan

- **Section 2: Water Service Reliability Assessment** summarizes key elements of the water supply reliability analysis conducted for the City's 2020 Urban Water Management Plan. [Water Code Section 10632(a)(1)]
- **Section 3: Procedures for Annual Water Supply and Demand Assessment** outlines the process that the City will use to conduct assessments each year to determine if a shortage exists or is anticipated and provides written decision making steps for any subsequent actions. [Water Code Section 10632 (a)(2)]
- **Section 4: Water Shortage Stages** describes the City's eight water shortage levels and illustrates how these align with the State's six standard water shortage levels. [Water Code Section 10632 (a)(3)(A)]
- **Section 5: Shortage Response Actions** describes the shortage response actions that the City will implement for each shortage level and estimates the extent these actions will address the gap between supplies and demands. [Water Code Section 10632 (a)(4)]
- **Section 6: Communication Protocols** explains the procedures that the City will use to inform customers, the public, and government entities of any current or predicted water shortages and associated response actions. [Water Code Section 10632 (a)(5)].
- **Section 7: Compliance and Enforcement** details the means that the City will use to ensure compliance with and enforcement of triggered shortage response actions and describes appeal and exemption procedures. [Water Code Section 10632 (a) (6)]
- **Section 8: Legal Authorities** describes the legal authorities that will empower implementation of the City's shortage response actions during water shortage emergencies. [Water Code Section 10632 (a)(7) and Division 1, Section 350]
- **Section 9: Financial Consequences of Water Shortage Contingency Plan** provides a discussion of the potential revenue reductions and expense increases associated with activating shortage response actions and describes the City's mitigation actions. [Water Code Section 10632 (a)(8)
- **Section 10: Monitoring and Reporting** summarizes how the City will ensure appropriate data is collected to monitor customer compliance and respond to state reporting requirements. [Water Code Section 10632(a)(9)]
- **Section 11: Shortage Plan Refinement Procedures** describes steps the City will take to assess the functionality of the Shortage Plan and make appropriate adjustments as may be warranted. [Water Code Section 10632(a)(10)]
- **Section 12: Plan Adoption, Submittal, and Availability** outlines how the City will adopt, submit, implement, and amend (if necessary) the Shortage plan, and how the City will make it publicly available. [Water Code Section 10632 (a)(c)]

Demand Management Measures

Chapter 9 of this UWMP provides an overview of the City's water use efficiency programs to promote conservation and reduce demands on water supplies. It also provides a description of and information about the status of implementation of Demand Management Measures (DMMs) listed below. In addition, it discusses implementation of DMMs to achieve water use targets and State standards for assessing and managing distribution system water loss. The DMMs are integral not only to the City's long term water

supply planning efforts but are also central to the effectiveness of the City's Shortage Plan, which has been summarized in **Chapter 8** and provided in detail in **Appendix F**. Additionally, a comprehensive analysis of the effectiveness of key programs can be found in **Appendix D** (EKI report).

The demand management measures described in **Chapter 9** include:

- Water Waste Prevention Ordinance
- Metering
- Conservation Pricing
- Public Education and Outreach
- Programs to Assess and Manage Distribution System Real Loss
- Water Conservation Program Coordination and Staffing Support
- Other Demand Management Measures

2025 UWMP Organization

The City's 2025 UWMP is organized as follows:

- **Chapter 1** provides background information on the UWMP, how the UWMP is organized, and regulatory changes that have occurred since adoption of the 2020 UWMP.
- **Chapter 2** provides an overview of UWMP requirements, units of measure, coordination and outreach processes, and public noticing.
- **Chapter 3** provides a general description of the City's water system and service area, City and Sonoma Water facilities, and general information on climate change.
- **Chapter 4** describes historical, current, and projected water demands, future conservation savings, and the City's response to climate change.
- **Chapter 5** addresses the requirements of the WC Act, year 2020 target compliance, and the Regional Alliance.
- **Chapter 6** discusses water supplies (Sonoma Water, groundwater, and recycled water) and provides a description of the Regional System.
- **Chapter 7** provides an overview of water supply reliability and potential impacts on various supply sources.
- **Chapter 8** provides a brief overview of the City's Shortage Plan, and points to **Appendix F** for the whole Shortage Plan.
- **Chapter 9** discusses the City's DMMs, including its long-standing conservation programs and other measures.
- **Chapter 10** describes the public hearing and adoption process, submittal of the UWMP, and UWMP availability.
- **Appendix A** through **Appendix F** provide relevant supporting documents including the City's Shortage Plan (**Appendix E**).

1. INTRODUCTION

This chapter provides an introduction and overview of the City of Santa Rosa (City) 2025 Urban Water Management Plan (UWMP) including the importance and extent of the City's water management planning efforts, regulatory changes since the preparation of the City's 2020 UWMP, and the organization of the City's 2025 UWMP. This 2025 UWMP has been prepared jointly by City staff and Woodard & Curran.

1.1 Introduction

The Urban Water Management Planning Act (UWMP Act) was originally established by Assembly Bill (AB) 797 on September 21, 1983. Passage of the UWMP Act was recognition by state legislators that water is a limited resource and a declaration that efficient water use and conservation would be actively pursued throughout the state. The primary objective of the UWMP Act is to direct "urban water suppliers" to develop a UWMP which provides a framework for long-term water supply planning, and documents how urban water suppliers are carrying out their long-term resource planning responsibilities to ensure adequate water supplies are available to meet existing and future water demands.

1.2 Importance and Extent of City's Water Management Planning Efforts

The purpose of the UWMP is to provide a planning tool for the City for developing and delivering municipal water supplies to the City's water service area. This UWMP provides the City a water management action plan for guidance as water conditions change and management conditions arise.

From 1873 until 1947, the City and the privately held Santa Rosa Water Works provided drinking water to residential, commercial, and institutional customers in Santa Rosa. The earliest water system (Santa Rosa Water Works) was fed from Santa Rosa Creek and from the then-newly constructed Lake Ralphine. The City's municipal water system began in 1893 by pumping water out of Santa Rosa Creek at the north end of Farmers Lane. The two systems were combined in 1947 and the City has been the sole water supplier to City customers since that time. Between 1948 and 1958, the City constructed eight groundwater supply wells, and by June 1959, the City's water supply was primarily from groundwater wells, supplemented by surface water supplies from Lake Ralphine. During the 1950s, the City participated in the financing of the water supply infrastructure of the Sonoma County Flood Control and Water Conservation District, which later became the Sonoma County Water Agency (now known as Sonoma Water). In June of 1959, the City connected to the Sonoma Water aqueduct and placed the City's water supply facilities in standby mode. Currently, the City has three sources of water supply: contractual entitlements to surface water from Sonoma Water, groundwater, and recycled water. Lake Ralphine is not currently used as a potable water supply source.

To continue to meet the water needs of the community, the City carefully manages its available water resources. The City's UWMP is a comprehensive guide for planning for a safe and adequate water supply for the next 25 years.

1.3 Changes from 2020 UWMP

The UWMP Act has been modified over the years in response to the State's water shortages, droughts, and other factors. Relative to the significant changes incorporated into the California Water Code (CWC) that

impacted the 2010, 2015, and 2020 UWMPs, there are relatively few changes since 2020 that impact the 2025 UWMP.

Summarized below are the major additions and changes to the CWC since the City's 2020 UWMP was prepared.

- **Nonfunctional Turf** [CWC Section 10608.14 and Section 110]. Prohibits the use of potable water for irrigation of nonfunctional turf, with phase-in of prohibitions across 2027-2031 based on various property types.
- **Urban Water Use Objectives and Water Use Reporting** [CWC Section 10609.4]: Codified the indoor residential water use standard as part of the "Making Conservation a California Way of Life" regulations.

Neither of the CWC changes above relate to any specific requirements within the 2025 UWMP. For more information on both of these changes, please refer to Chapter 9 (Demand Management Measures) for more information.

1.4 Plan Organization

This 2025 UWMP contains the appropriate Sections and tables required per CWC Division 6, Part 2.6 (Act), and has been prepared based on guidance provided by the California Department of Water Resources (DWR) in their "Urban Water Management Plan Guidebook 2025" (DWR Guidebook).

This 2025 UWMP is organized into the following chapters:

Chapter 1: Introduction

Chapter 2: Plan Preparation

Chapter 3: System Description

Chapter 4: Water Use Characterization

Chapter 5: SB X7-7 Baselines, Targets and 2020 Compliance

Chapter 6: Water Supply Characterization

Chapter 7: Water Service Reliability and Drought Risk Assessment

Chapter 8: Water Shortage and Contingency Planning

Chapter 9: Demand Management Measures

Chapter 10: Plan Adoption and Submittal Implementation

This 2025 UWMP also contains the following appendices of supplemental information and data related to the City's 2025 UWMP:

Appendix A: Adoption Resolution for 2025 Urban Water Management Plan and 2025 Water Shortage Contingency Plan

Appendix B: Public Notices for Urban Water Management Plan and Water Shortage Contingency Plan
Appendix C: Department of Water Resources Reporting Tables
Appendix D: Water Demand Analysis
Appendix E: Water Shortage Contingency Plan
Appendix F: Department of Water Resources Urban Water Management Plan Checklist

Furthermore, this 2025 UWMP contains all the tables recommended in the DWR Guidebook, both embedded into the UWMP chapters where appropriate and included in **Appendix C**.

DWR's Urban Water Management Plan Checklist, as provided in the DWR Guidebook, has been completed by Woodard & Curran to demonstrate the plan's compliance with applicable requirements. A copy of the completed checklist is included in **Appendix F**.

2. PLAN PREPARATION

This chapter describes the preparation of the City's 2025 Urban Water Management Plan (UWMP) and 2025 Water Shortage Contingency Plan (Shortage Plan), including the basis for the preparation of the plans, individual or regional planning, basis of reporting year (calendar versus fiscal), units of measure, and plan coordination and outreach.

2.1 Basis for Preparing a Plan

The UWMP Act requires every "urban water supplier" to prepare and adopt an UWMP, review its UWMP at least once every five years, and make any amendments or changes which are indicated by the review. An "urban water supplier" is defined as a supplier, either publicly or privately owned, providing water for municipal purposes either directly or indirectly to more than 3,000 customers or supplying more than 3,000 AFY.

The City's water system qualifies under the California Health and Safety Code, Section 116275, as a "Public Water System" (PWS) that provides drinking water for human consumption. The City manages PWS CA4910009, which is regulated by the State Water Resources Control Board, Division of Drinking Water. The City operates a single, retail drinking water system, which receives water from a wholesale supplier and from the City's groundwater wells. The City's public water system does not supply raw or treated drinking water to another agency.

In accordance with the CWC, an urban water supplier with 3,000 or more service connections or supplying more than 3,000 AFY of water is required to prepare an UWMP every five years with a planning horizon spanning at least 20 years. The State recommends, but does not require, a 25-year planning horizon. As shown in **Table 2-1**, the City provided water to 55,851 service connections and supplied 17,172 acre-feet of potable water in 2025. Therefore, the City is an urban water supplier and required to prepare an UWMP. The City's last UWMP, the 2020 UWMP, was adopted by the City Council in June 8, 2021. The City chose to use a 25-year planning horizon out to 2050 for this 2025 UWMP.

TABLE 2-1: PUBLIC WATER SYSTEMS (DWR TABLE 2-1 RETAIL)

Public Water System Number	Public Water System Name	Number of Municipal Connections 2025	Volume of Water Supplied 2025 (AF)
CA4910009	City of Santa Rosa	55,851	17,172
	Total	**55,851**	**17,172**
NOTES: Volumes are in AF. Potable water only. Recycled water connections not included.			

2.2 Regional Planning

CWC provides mechanisms for participating in area wide, regional, watershed, or basin wide urban water management planning. Water suppliers who receive water from a shared wholesale supplier may choose to form an alliance to comply on a regional basis with the Water Conservation Act (WC Act) of 2009.

A group of water suppliers agreeing among themselves to plan, comply, and report as a region on the requirements of the SB X7-7 is referred to as a "Regional Alliance." Each Regional Alliance develops and

demonstrates meeting its own set of 2025 Urban Water Use Targets. A Regional Alliance allows water suppliers to work toward cooperatively developing programs and meeting regional water conservation targets but not necessarily submitting a Regional Plan. Being a member of a Regional Alliance does not take the place of submitting an UWMP.

Per DWR guidance, each Regional Alliance must develop regional Urban Water Use Targets. Additionally, a Regional Alliance may either be a part of a Regional UWMP (RUWMP) or may be a group of suppliers that submit a Regional Alliance Report and individual UWMPs. The Regional Alliance's water use targets are discussed in **Chapter 5**. The City has prepared an individual UWMP and will not adopt an RUWMP.

The Water Contractors of Sonoma Water formed a Regional Alliance for SB X7-7 compliance purposes, consisting of the following urban water suppliers: Cities of Santa Rosa, Cotati, Petaluma, Rohnert Park, Sonoma, and the Town of Windsor, and Marin Municipal, North Marin, and Valley of the Moon Water Districts. Based on an evaluation of 2025 water demand and population data, it has been determined that the Regional Alliance has met its collective 2025 regional target. Additional SB X7-7 information can be found in **Chapter 5**. A copy of the letter to DWR regarding the formation of the Regional Alliance, as well as the letter agreement forming the Regional Alliance in 2011, is included in Appendix G of the previous 2020 UWMP.

2.3 Individual or Regional Planning and Compliance

As shown in **Table 2-2**, the City's 2025 UWMP has been prepared on an Individual Reporting basis, covering only the City's service area. As described below in **Section 2.5**, the City has notified and coordinated with appropriate regional agencies and constituents, including Sonoma Water, other Agency contractors, as well as several local agencies in compliance with the UWMP Act.

TABLE 2-2: PLAN IDENTIFICATION (DWR TABLE 2-2)

Select One	Type of Plan	Name of Regional Alliance or RUWMP
☑	**Individual UWMP**	
	If Water Supplier is also a member of a SB X7-7 Regional Alliance, select name from the drop-down.	North Marin-Sonoma Alliance
☐	**Regional Urban Water Management Plan (RUWMP)**	
	If Supplier selected RUWMP, select name from the drop-down.	
NOTES: Regional Alliance includes City of Santa Rosa, eight other Sonoma County Water Agency contractors including Marin Municipal Water District.		

2.4 Fiscal or Calendar Year and Units of Measure

The City prepared this 2025 UWMP on a calendar year basis, with the calendar year starting on January 1 and ending on December 31 of each year. As required for UMWPs for the year 2025, the City has included

water use and planning data for the entire calendar year of 2025. The City reports water volumes in units of acre-feet (AF) in this plan. The City's reporting methods for this 2025 UWMP are summarized in **Table 2-3.**

TABLE 2-3: SUPPLIER IDENTIFICATION (DWR TABLE 2-3)

Type of Supplier	
☑	Supplier is a wholesale supplier
	Supplier is a retail supplier
Fiscal or Calendar Year	
☑	UWMP Tables are in calendar years
	UWMP Tables are in fiscal years
Units of measure used in UWMP	
Unit	AF

2.5 Coordination And Outreach

The UWMP Act requires the City to coordinate the preparation of its plan with City departments and other appropriate agencies, including other water suppliers that share a common source, water management agencies, and relevant public agencies. The City's coordination efforts are summarized below.

2.5.1 Wholesale and Retail Coordination

The City is a water retailer. The City receives wholesale water from Sonoma Water. In accordance with CWC Section 10631, the City has informed Sonoma Water of projected water use from that source in five year increments through 2050. Sonoma Water provided information to the City, identifying and quantifying water supplies available for the same period, under normal water year, single-dry year, and dry five-year periods, as well as for the DRA for the next five years 2026-2030 (see **Section 7.3**).

TABLE 2-4: WATER SUPPLIER INFORMATION EXCHANGE (DWR TABLE 2-4 RETAIL)

The retail Supplier has informed the following wholesale supplier(s) of projected water use.
Wholesale Water Supplier Name
Sonoma County Water Agency (Sonoma Water)

2.5.2 Coordination with Other Agencies and the Community

Water suppliers must coordinate the preparation of their UWMP with other appropriate agencies in the area, to the extent practicable. The City coordinated the preparation of this UWMP with several agencies

including the eight other neighboring Sonoma Water contractors, the Santa Rosa Regional System (wastewater utility), and the City's Planning and Economic Development Department. These and other agencies, as well as the public, participated in the coordination and preparation of this 2025 UWMP. In addition, the City coordinated the preparation of the water demand projections in this UWMP with the City's Planning and Economic Development Department and relied on data from the 2050 Santa Rosa General Plan.

The City encouraged community and public interest and involvement in the 2025 UWMP update through outreach in its water bills, City newsletter, public meetings of the City's Board of Public Utilities (BPU) and its Water Conservation Subcommittee, and public meetings of the City Council, including a public hearing. Copies of the City's public hearing notices are included in **Appendix B**.

For 30 days prior to the public hearing, copies of the draft UWMP and draft Shortage Plan were made available for public inspection electronically and in hard copy at two City facilities. The public review period and the public hearing provided an opportunity for all City water users and the general public to become familiar with the Plan and to ask questions about its existing water supply and its plans for providing a reliable, safe, high quality water supply over the upcoming 25 years.

Table 2-5 lists the organizations that were notified and solicited for input in UWMP preparation.

TABLE 2-5: COORDINATION AND NOTIFICATION FOR PLAN PREPARATION

Organization/ Agency Name	Level of Participation			
	Participated in Developing the Plan	Commented on the Draft	Attended Public Meetings	Was Sent a Copy of the Draft Plan
Sonoma Water	x	x	x	x
Sonoma County Local Agency Formation Commission				x
Sonoma County Permit and Resource Management Department				x
Santa Rosa Plain Groundwater Sustainability Agency				x
Neighboring water providers[(a)]	x	x	x	x
Santa Rosa Regional Water Reuse System	x	x		x
General public	x	x	x	x

(a) Neighboring water providers included the Cities of Rohnert Park, Petaluma, Cotati, Sebastopol, and Sonoma; Town of Windsor; and the North Marin, Marin Municipal, and Valley of the Moon Water Districts.

2.5.3 Notice to Cities and Counties

CWC Section 10621(b) requires a water supplier to notify the cities and counties within which the supplier provides water at least 60 days in advance of the public hearing that the City's UWMP is being updated and

reviewed. Although the City only provides water within the City's boundary, such notice of preparation was sent to the cities, the County of Sonoma, Sonoma Water, and other stakeholders on January 20, 2026, to inform them of the UWMP update process and schedule, and to solicit input for the 2025 UWMP and the 2025 Shortage Plan. The notifications, as well as the public hearing notifications and the public hearing and adoption, are discussed in **Chapter 10.**

3. SYSTEM DESCRIPTION

This chapter describes the City's water system, service area, and climate. It outlines the City's current and historical water supply sources and water distribution infrastructure. It also provides information on current demographics, projected future population, current and projected future land uses, and potential impacts of climate change on the City's water management planning.

3.1 General Description

Located at the intersection of Highway 101 and Highway 12, Santa Rosa lies approximately 50 miles north of San Francisco and 30 miles east of the Pacific Ocean. Santa Rosa serves a four-county region as the hub for technology and entrepreneurial businesses, retail, banking, and employment. The City has a dynamic and well-balanced economy anchored by tourism, high-tech manufacturing, and retail.[3]

Santa Rosa was founded in 1833 and recognized by the State as an incorporated City in 1868. By City Charter, the City is governed by an elected City Council. The City Charter also stipulates that the City's water system is to be overseen by an appointed Board of Public Utilities (first seated in 1924).

When the City was incorporated in 1868, it had an area of about one square mile and 900 residents. Since that time, Santa Rosa has evolved into a commercial, financial, medical, and industrial center of the North Bay (a subregion of the San Francisco Bay Area). Santa Rosa is the county seat for Sonoma County and home to the region's state and federal offices. With an area of approximately 45 square miles and over 174,000 residents, Santa Rosa is also the largest city between San Francisco and Portland, Oregon.

Land use within the City is primarily residential but also includes industrial, commercial, institutional and recreational land uses. Additional information about land use is provided in **Section 3.6.**

Santa Rosa employment is diversified across the public sector and the service and manufacturing industries, with a broad spectrum of commercial services such as technology, engineering, and construction. Additionally, recreation and tourism are growing industries. More broadly, regional employment in the agricultural industry is related to vineyards, livestock, orchards, silage crops, and timber; however, none of these agricultural enterprises are served by the City's urban water system.

Since the adoption of the 2020 UWMP, the City has annexed four areas totaling 51.91 acres.

3.2 Service Area Boundary Maps

Within Santa Rosa's urban service area, the City supplies potable water to residential, industrial, institutional, and commercial customers. No agricultural uses are supplied with City potable water. In addition to potable water service, the City provides recycled water for landscape irrigation, serving 32 urban recycled water connections. Details regarding the City's water supply sources are included in **Chapter 6.**

The City's current service area is the same as the City's municipal boundary. **Figure 3-1** depicts the City's current and projected service area boundaries as well as major infrastructure assets including pump stations, storage tanks, and wells, which are described below. The City's service area and voter-approved Urban

[3] www.srcity.org

Growth Boundary relative to Sonoma Water's facilities are shown on **Figure 3-2. Figure 3-3** shows the service area of the City's urban recycled water distribution system. The City does not plan to expand the urban recycled water system during the planning period of this UWMP.

In the future, the City's water service area may expand to the Urban Growth Boundary, as described in the City's 2050 General Plan, which includes areas outside of the City's current distribution system. While the City's distribution system may expand to serve the Urban Growth Boundary at some point in the future, as noted in the City's 2050 General Plan, it is not possible to predict the specific location or distribution of growth. Market trends and/or environmental constraints will direct this growth over time.

3.3 Water System History And Description

The history of the water system and a general description of water system facilities are provided below.

3.3.1 Water System History

From 1873 until 1947, the City was served by two separate potable water systems. Established in 1873, a privately owned and operated system called the Santa Rosa Water Company diverted water from Santa Rosa Creek and the newly constructed, privately owned Lake Ralphine. In 1893, the City began building a municipal water system to serve a portion of Santa Rosa with water pumped out of Santa Rosa Creek at the north end of Farmers Lane.

In 1947, the residents of Santa Rosa voted to issue bonds to improve the City's municipal water system. As a result, the City purchased Santa Rosa Water Company from the private owner and integrated the acquired assets into the operation of the City's municipal water system using bond funding. At that time, the City's water system had 4,615 services and supplied 2,091 AFY of water from surface water, groundwater wells, and springs. The City has been the sole water supplier to City customers ever since.

Over the next decade, the City increased its water supply capacity by developing new wells. Between 1948 and 1958, the City constructed eight groundwater supply wells. By June 1959, the City's primary water supply source was groundwater, supplemented by surface water supplies from Lake Ralphine. During the 1950s, the City also participated in financing new water supply infrastructure of the Sonoma County Flood Control and Water Conservation District (District), which later became the Sonoma County Water Agency (now known as Sonoma Water).[4]

Figure 3-1 shows a map of the City's existing water system. The following **Figure 3-2** shows the City's service area in the context of regional infrastructure. **Figure 3-3** shows the City's recycled water system.

[4] Ibid.

FIGURE 3-1: CITY OF SANTA ROSA EXISTING WATER SYSTEM

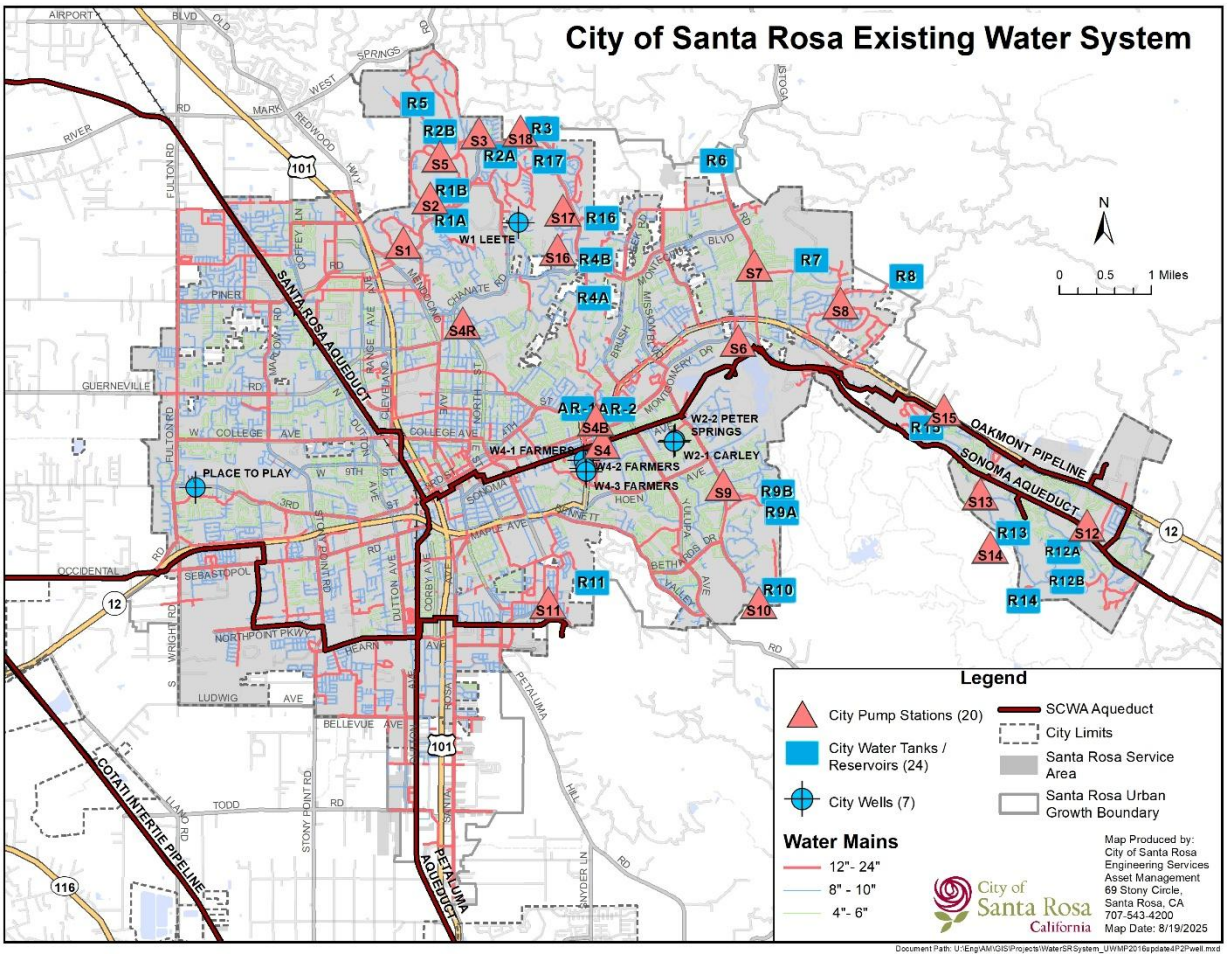


FIGURE 3-2: CITY OF SANTA ROSA SERVICE AREA WITH ASSOCIATED SONOMA COUNTY WATER AGENCY INFRASTRUCTURE

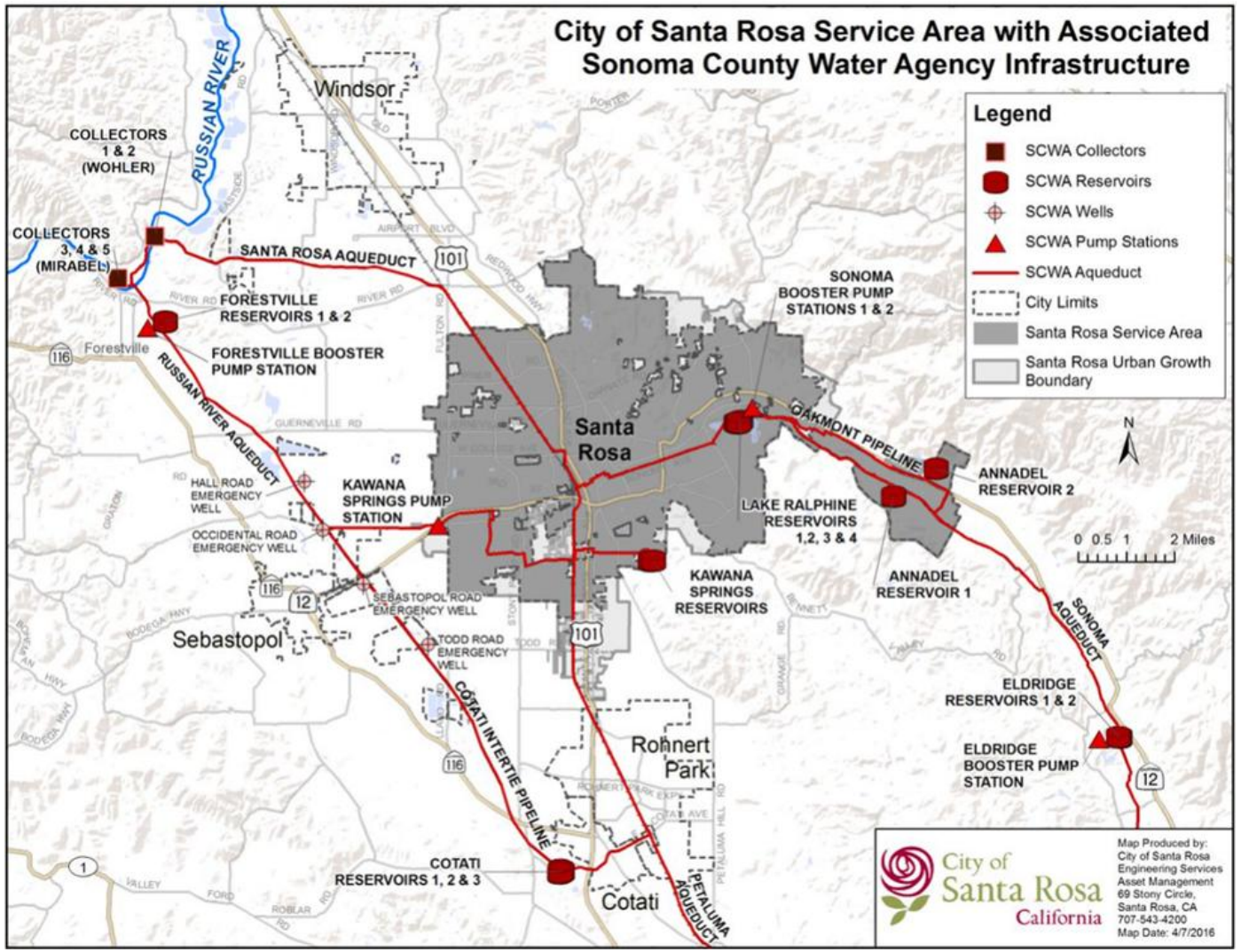
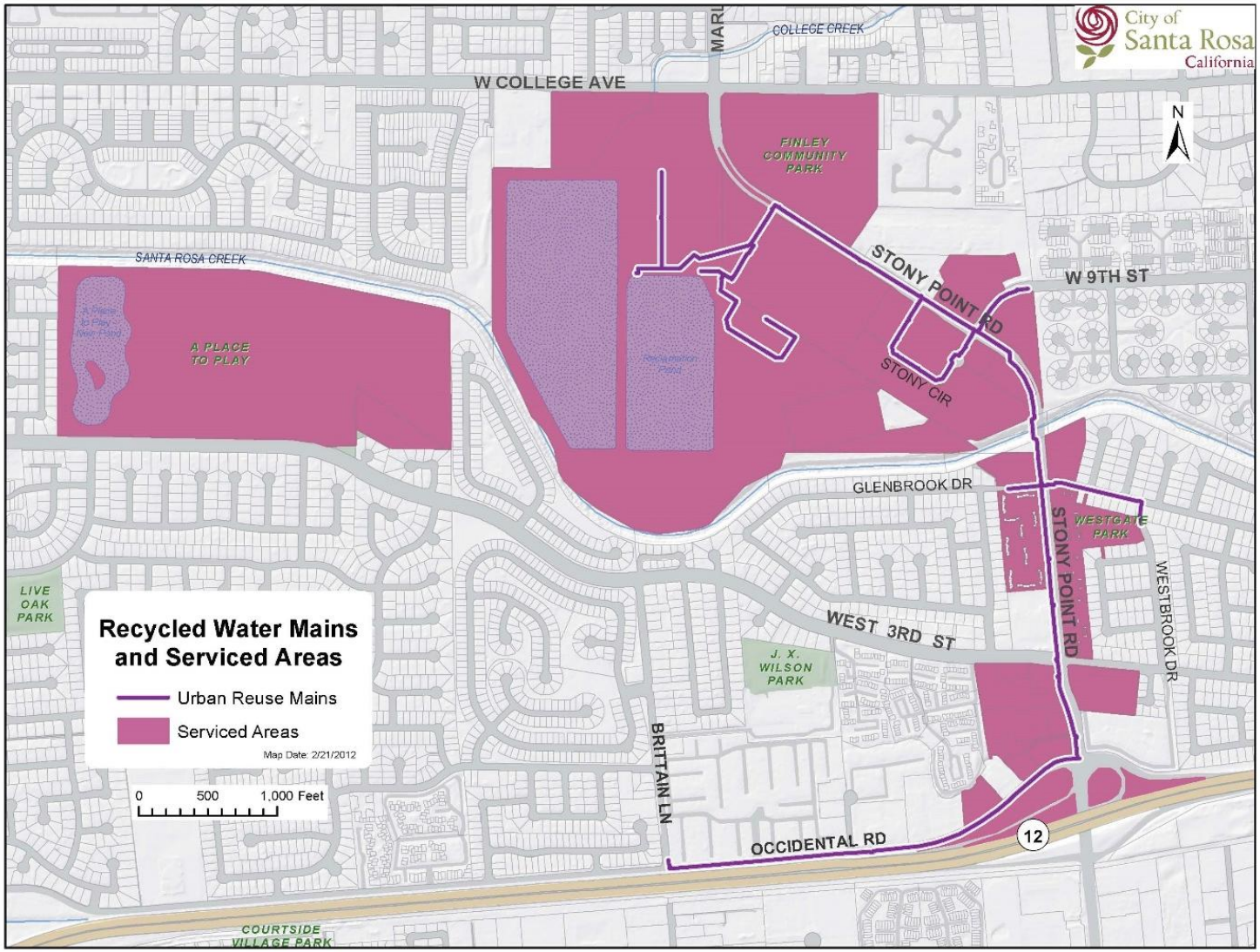


FIGURE 3-3: CITY OF SANTA ROSA URBAN RECYCLED WATER DISTRIBUTION SYSTEM



In June of 1959, the City signed a contract with the District to purchase potable water diverted from the Russian River for the City's municipal water supply. The City put its groundwater production wells on standby status and discontinued using local surface water diversions. The City transitioned Lake Ralphine into a recreational facility and has not used it as a water supply source since that time. By 1960, the City had 12,000 water connections and 31,721 residents.

Over the next six decades, the City gradually expanded its potable distribution system and infrastructure to ensure ongoing reliable service for its customers. The City has added water mains, pump stations, storage reservoirs (above ground tanks), and two groundwater wells (shifting them from standby status to active status). As of January 2024, the City's potable water system has grown to over 54,000 water connections serving 174,890 residents.

The City also owns, maintains, and operates an urban recycled water distribution system which provides non-potable water for landscape irrigation for 32 connections. The source of recycled water is the Laguna Treatment Plant (owned and operated by the City) which treats wastewater collected from homes and businesses from the City and other nearby municipalities. The City's water recycling system is monitored by state, local, and federal agencies, and its recycled water meets or exceeds California standards for all recycled water uses except drinking water.

Currently, the City has two sources of potable water supply (surface water from Sonoma Water and groundwater from City wells), and one source of non-potable water supply (recycled water from the Regional System). Water supply sources are discussed in more detail in **Chapter 6**.

3.3.2 Water System Description

The City's and Sonoma Water's surface water, groundwater, and distribution system facilities are described below.

3.3.2.1 Surface Water System Facilities

The City's potable water supply from Sonoma Water is predominantly surface water, which is diverted from the Russian River. Sonoma Water provides water to the City via the Santa Rosa and Sonoma Aqueducts that deliver water to the City's distribution system through turnouts at multiple locations across the City. In addition to surface water diverted from the Russian River, Sonoma Water supplements its water supply with groundwater wells located in the Santa Rosa Plain sub-basin. A description of Sonoma Water's supply quantity and quality are included in **Section 6.1**.

3.3.2.2 City Groundwater Facilities

The City is located within the Santa Rosa Plain sub-basin of the Santa Rosa Valley Groundwater Basin, located at the confluence of the Santa Rosa, Bennett, and Rincon Valleys.[5] Although the City's Urban Growth Boundary overlies portions of the Rincon Valley Sub basin and the Kenwood Valley Groundwater Basin, the City's groundwater supply is derived exclusively from the Santa Rosa Plain Sub-basin of the Santa Rosa Valley Groundwater Basin. A thorough discussion of the groundwater basin and supply is provided in **Section 6.2.**

[5] Department of Water Resources Bulletin 118, Groundwater Basin Descriptions, updated February 27, 2004.

The City maintains a total of seven municipal groundwater wells within the Santa Rosa Plain Sub-basin of the Santa Rosa Valley Groundwater Basin. They are described as follows:

- Farmers Lane Wells No. 1 and 2: These two wells were changed from emergency to active status by the former California Department of Public Health (DPH) on July 20, 2005. The two wells are currently permitted by the California State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW). These wells can provide up to 2,300 acre feet per year (AFY) and are the City's only potable groundwater sources in active use. They have been used to supplement potable water supplies obtained from Sonoma Water, particularly during seasonally high demand periods;

- Carley Well and Peter Springs Well: These two wells are operated primarily to provide water for landscape irrigation to an adjacent park, refilling Lake Ralphine, and irrigation of nearby school grounds. These wells are also permitted by DDW to operate and provide potable supply during an emergency outage condition;

- Farmers Lane Well No. 3: This well is only operated to provide minor amounts of landscape irrigation water supply to areas adjacent to the well;

- Leete Well: This well is only used to provide potable water during an emergency outage condition (as permitted by DDW). This well is currently out of service due to a casing separation; and

- A Place to Play Well: This well is under construction and will only be used to provide potable water during an emergency outage condition (as permitted by DDW).

3.3.2.3 Sonoma Water Groundwater Facilities

Approximately 99 percent of water delivered by Sonoma Water is from the Russian River, with the remainder from groundwater.[6] Sonoma Water supplements its surface water supply with three groundwater wells in the Santa Rosa Plain Sub-basin. These groundwater wells are located along Sonoma Water's Cotati Aqueduct at Todd Road (SCWA-04), Sebastopol Road (SCWA-05), and Occidental Road (SCWA-06) on the west side of the Santa Rosa Plain Sub-basin. All three wells are drilled to depths greater than 1,000 feet. Because these wells feed into Sonoma Water's Cotati Aqueduct, which provides no supply to the City, little or no groundwater from Sonoma Water is delivered to the City by Sonoma Water to meet the City's 29,100 AFY of contractual supply entitlement under the Restructured Agreement for Water Supply. A full discussion of Sonoma Water's groundwater supply is provided in Sonoma Water's 2025 UWMP.

3.3.2.4 Non-Potable Water Distribution System

The City's wastewater collection and treatment systems and its production and use of recycled water are discussed in detail in **Section 6.3**. As shown in **Figure 3-3**, the City distributes recycled water for landscape irrigation within its urban water service area to 32 connections serving multi-family residential customers, commercial customers, and institutional/governmental customers (parks, median strips, and office buildings). The source of recycled water is the Santa Rosa Regional Water Reuse System (Regional System), which is owned and operated by the City of Santa Rosa. The Regional System produces tertiary treated recycled water that is approved for non-potable reuse, under the authority of its National Pollution

[6] Email from Marcus Trotta, Principal Geologist, Sonoma County Water Agency, January 28, 2020

Discharge Elimination System (NPDES) Permit. The City distributes and uses this recycled water for non-potable uses (landscape irrigation and dust control) within its urban jurisdiction under the SWRCB General Order for Recycled Water Use *WQ-2016-0068-DDW*.

3.3.2.5 Potable Water Distribution System

The City receives potable water from Sonoma Water through a series of turnouts, check valves, and direct connections along Sonoma Water's Santa Rosa and Sonoma Aqueducts. There are 59 physical connections between the City's distribution system and Sonoma Water's system, including 39 pressure reducing valves, 16 check valves, and 4 pumping stations. The City's major water distribution facilities consist of 652 miles of main, 21 treated water tanks (reservoirs), and 20 water pump stations (plus one additional pump station that is not in use). These facilities and the distribution pipelines are described in this section.

3.3.2.5.1 Storage

Twenty-one water storage tanks are located throughout the City's water distribution system as shown on **Figure 3-1**. The storage capacity of each tank ranges from 0.1 to 4.0 million gallons (MG) for a total capacity of 22.1 MG.

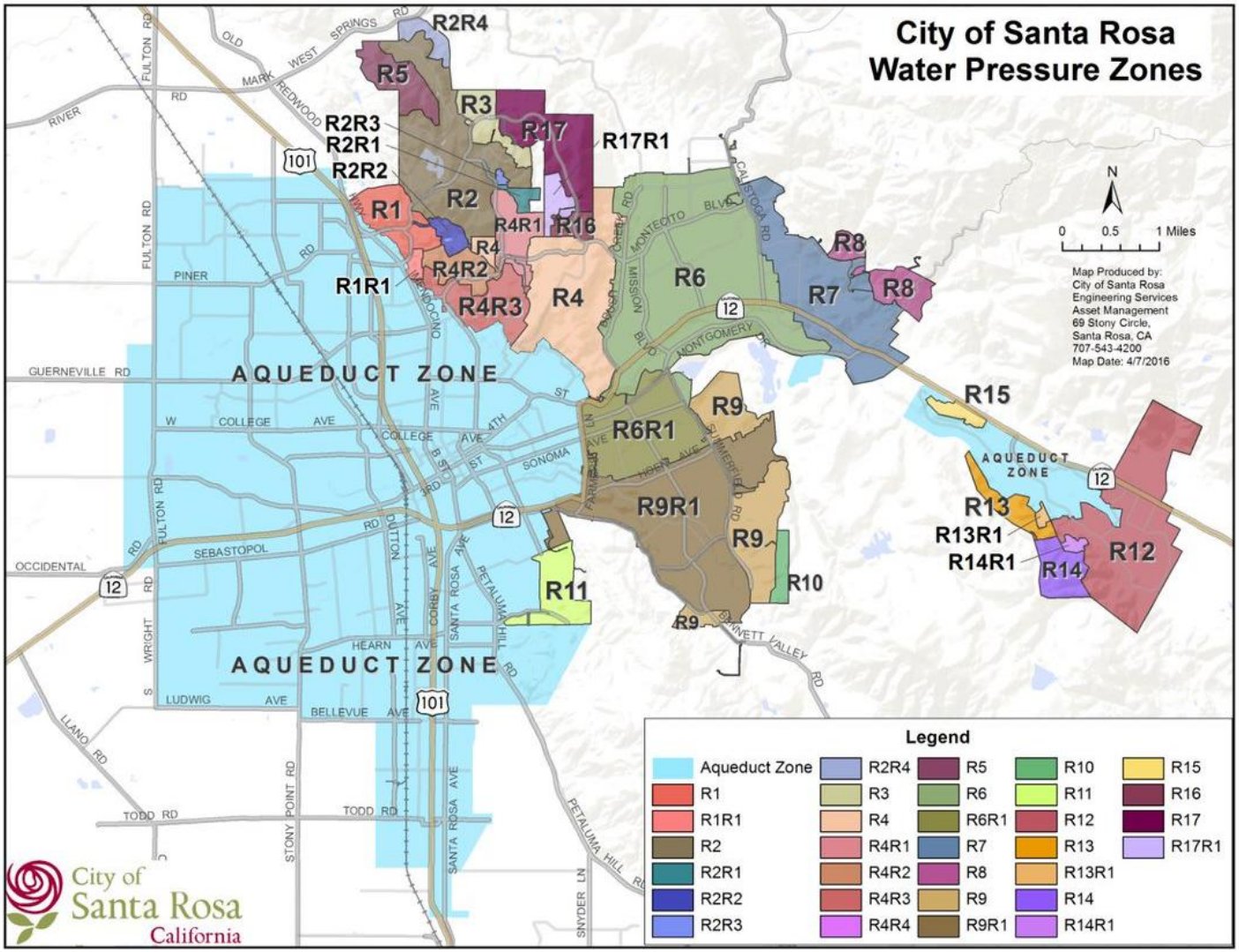
3.3.2.5.2 Pump Stations

The City maintains and operates 20 water pump stations and one well treatment facility for delivery of water and to maintain water system pressure. Pump station capacities range from approximately 130 gallons per minute (gpm) to 5,000 gpm.

3.3.2.5.3 Distribution Pipelines

The City's existing water distribution system is divided into 18 major pressure zones, and several smaller sub-zones, that are served by 652 miles of main, ranging in diameter from 4 to 24 inches. Most water connections are served via laterals from 6-inch to 12-inch diameter mains. Pipe materials include asbestos cement, polyvinylchloride (PVC), high-density polyethylene (HDPE), ductile iron, and cement mortar lined and coated steel. The pressure zones are shown on **Figure 3-4.**

FIGURE 3-4: CITY OF SANTA ROSA WATER PRESSURE ZONES



3.4 Service Area Climate

The City's climate is influenced by the Pacific Ocean and is divided into wet and dry seasons. Approximately 93 percent of the annual precipitation normally falls during the wet season, October to May, with a large percentage of the rainfall typically occurring during three or four major winter storms. Winters are cool, and below-freezing temperatures occasionally occur. Average annual precipitation in the Santa Rosa area is 33.65 inches (see **Table 3-1**). Prevailing winds are from the west and southwest. Summers are warm, and the frost-free season is fairly long. Details about the City's climate statistics and the potential effects of climate change are described below.

3.4.1 Climate Statistics

Water use within the City's service area is dependent on various climate factors such as temperature, precipitation, and evapotranspiration (ET). Temperature and precipitation averages were obtained from the National Oceanographic and Atmospheric Administration's National Centers for Environmental Information for Santa Rosa, California for 1991-2020.

ET describes the combined water lost through evaporation from the soil and plant transpiration. In general, the Reference Evapotranspiration (ET_o) is given for turf grass, and then corrected for a specific crop type. Local average ET_o data was obtained from the California Irrigation Management Information System (CIMIS) Station 83 (Santa Rosa) for 1990-2025.

Table 3-1 includes monthly average ET_o, rainfall, and temperatures for the City. These climate characteristics affect water management within the City's service area.

TABLE 3-1: MONTHLY AVERAGE CLIMATE DATA SUMMARY

Month	Standard Monthly Average ET_o, inches[(a)]	Average Total Rainfall, inches[(b)]	Average Temperature, degrees Fahrenheit[(b)]	
			Maximum	Minimum
January	1.19	6.26	59.7	38.4
February	1.84	6.49	63.6	40.0
March	3.14	4.9	66.9	41.9
April	4.40	2.34	70.6	43.9
May	5.56	1.45	74.5	47.8
June	6.26	0.34	80.2	51.1
July	6.43	0.05	81.6	52.1
August	5.60	0.05	83.0	52.5
September	4.58	0.21	83.9	51.0
October	3.26	1.58	78.9	47.6
November	1.62	3.67	67.1	42.0
December	0.99	6.24	58.6	38.2
Total	**44.90**	**31.54**	**72.4**	**45.5**

(a) Source: California Irrigation Management Information System, CIMIS Monthly Average ET_o Report for Santa Rosa station 83 (downloaded May 7, 2025 for the full period of record available at the time of the download (1990-2025).

(b) Temperature data from NOAA National Centers for Environmental Information (NCEI), *U.S. Climate Normals (1991–2020)*, Santa Rosa station USC000047965. Precipitation data from NOAA NCEI, Santa Rosa station USC000047965, average total rainfall based on 1991–2020 climate normals, accessed August 13, 2025.

3.4.2 Potential Effects of Climate Change

The UMWP Act requires water suppliers to account for the impact of climate change on water supplies and supply reliability. A discussion of the effects of climate change on water demands, supplies, and reliability can be found in **Chapter 4** (Water Use Characterization), **Chapter 6** (Water Supply Characterization), and **Chapter 7** (Water Service Reliability and Drought Risk Assessment). This section summarizes the discussions from these chapters below:

- Water Demand: Hotter days and nights, as well as a longer irrigation season, will increase landscaping and irrigation water needs. Peak water demands may also be impacted.
- Water Supply: More extreme weather events such as hotter, longer drought periods have the potential to impact water supply and supply reliability. Water quality is not expected to decline.
- Natural Disaster: Natural disasters will challenge water supplier operations in several ways: wildfires are expected to increase in intensity and frequency, droughts are expected to become deeper and longer, and floods are expected to become larger and more frequent.

Responding to climate change generally takes two forms: mitigation and adaptation. Mitigation is taking steps to reduce the contribution to the causes of climate change by reducing greenhouse gas (GHG)

emissions. Adaptation is the process of responding to the effects of climate change by modifying systems and behaviors to function in a warmer climate.

In the water sector, climate change mitigation is generally achieved by reducing energy use, using energy more efficiently and optimizing time of use, instituting capital improvements for infrastructure resiliency, and/or substituting fossil fuel-based energy sources for renewable energy sources. Because water requires energy to move, treat, use, and discharge, and require energy to heat by end users, water conservation results in energy conservation.

The Water Supply Alternatives Plan was accepted by the Santa Rosa City Council in late 2023 to enhance Santa Rosa's water supply resiliency during future droughts and other catastrophic events. The Plan whittled down eighteen water supply options to three options to pursue now, and four additional to consider in the future depending on supply needed and other factors. The Plan is in implementation and more information about this process can be found at *www.srcity.org/OurWaterFuture*.

A discussion of the potential impact of climate change on water supply and demand is provided in **Section 4.6.** Additional discussion of the potential impact of climate change on water supply sources is provided in **Section 6.9**. A discussion of water demand management and water use efficiency is provided in **Chapter 9.**

3.5 Service Area Population And Demographics

The City's service area population and other demographics are discussed below.

3.5.1 Service Area Population

The City's water service area population primarily consists of full-time residents. Current and projected service area population is summarized in **Table 3-2.** The City's current population estimate was derived from the 2050 General Plan which uses Census data from 2000 to 2021 and ABAG projections from 2025 to 2040. The 2050 General Plan estimates the City's 2025 population to be 186,445 residents.

TABLE 3-2: RETAIL POPULATION CURRENT AND PROJECTED (DWR TABLE 3-1 RETAIL)

Population Served	2025	2030	2035	2040	2045	2050
	186,445	204,795	213,615	223,060	232,923	243,222
NOTES: Source: **Appendix D** Demand Study Report Santa Rosa (EKI), Table 5-2						

3.5.2 Other Social, Economic, and Demographics Factors

The State requires the inclusion of service area socioeconomic information as part of the system description in UWMPs. Although differences in household water use across sociodemographic groups in Santa Rosa have not been studied, the following social, economic, and demographic information is being provided to comply with the regulation. The information was derived from the US Census Bureau's profile of Santa Rosa for 2023.[7]

[7] United States Census Bureau, American Community Survey, 2023 American Community Survey 1-Year Estimates Profile for Santa Rosa, California. https://data.census.gov/profile/Santa_Rosa_city,_California?g=160XX00US0670098

- The average family size was 2.99.
- The median household income in Santa Rosa was $93,106, while 11.4 percent of all individuals and 13.7 percent of youth under the age of 18 lived in poverty.
- The average employment rate was 64.3 percent.
- The owner-occupied housing unit rate was 56.4 percent.
- The median gross rent was $2,072 per month.
- The median age was 41.6 years.
- Of persons 25 years or older in Santa Rosa, 34.0 percent had earned a bachelor's degree or higher.
- 13.1 percent had a disability and 5.1 percent did not have health insurance.
- 19.3 percent of Santa Rosa residents were foreign-born.

3.6 Land Uses Within Service Area

During preparation of this UWMP, staff from the City's Water Department coordinated with staff from the City's Planning and Economic Development Department (the land use authority for Santa Rosa). Staff reviewed and gathered data from a range of sources (e.g., City records, County parcel data, and published reports by the Association of Bay Area Governments, the Metropolitan Transportation Commission, CDF, and State Department of Housing and Community Development) to compile information related to historic, current, and projected development projects, redevelopment initiatives, housing units by type (Single Family and Multi-Family), housing units by affordability, population, employment, and socio economic factors.

Table 3-3 summarizes the City's current land uses. As shown, 82 percent of acreage has been developed, and 18 percent is vacant.

TABLE 3-3: CURRENT LAND USE WITHIN URBAN GROWTH BOUNDARY[(A)]

Land Use Type	Acres	Percent
Single Family Residential	10,131.67	41%
Multi-Family Residential[(b)]	2,105.00	9%
Parks, Open Space, Creeks and Landscapes	3,626.00	15%
Institutional	1,941.58	8%
Commercial	1,382.61	6%
Industrial	1,093.05	4%
Vacant	4,411.57	18%
Total	**24,691.48**	**-**

(a) Does not include roads, parking, rail.
(b) Includes these land use designations: Multi-Family, Common areas, Senior living, and Mobile home parks.
Source: General Plan 2050, Housing Element, page 6-13

Published housing projections, provided in **Table 3-4**, anticipate a 36 percent increase in the number of units in Santa Rosa by 2050.

TABLE 3-4: HOUSING PROJECTIONS

2025	2030	2035	2040	2045	2050
73,671	82,161	86.242	90,612	95,175	99,940
2025 is based on actual total housing units from Department of Finance City/County Population and Housing Estimates E-5 (1/1/2025) for the City of Santa Rosa. 2050 is based on buildout (2050) estimates of housing units provided in Santa Rosa General Plan 2050. 2030-2045 was interpolated based on the same rate of growth in population estimated over the 2025-2050 period.					

The City's water records show that over the past ten years (2015-2024), 72 percent of all water delivered by the City has been consumed by the residential sector. Based on this, as well as land use and housing data, it appears that the residential sector has been and will continue to be a central driver of total per capita water use for the City for the foreseeable future.

Water demand projections for 2025 through 2050 integrated the data, reports, and information discussed in this section, as well as other considerations. **Appendix D** has detailed descriptions of the data and methodologies used to develop growth scenarios and refine demand projections.

4. WATER USE CHARACTERIZATION

This chapter describes past, current, and projected water use through 2050 by water source and customer type. The terms "water use" and "water demand" are used interchangeably and refer to water conveyed by the City's urban water distribution system and used by the City and its customers for any purpose. The Chapter discusses potable and non-potable water sources and outlines usage by sector, including water loss from the distribution system. Additionally, this chapter relates the likely impacts of climate change on water supply and usage and outlines the City's mitigation and adaptation efforts in response to climate change.

4.1 Demand Analysis Methodology

This section focuses on the demand analysis and includes a realistic prediction of future potable and non-potable (recycled) water use based on the City's past and current use, combined with considerations of anticipated trends in customer water use, population growth, employment projections, new development, land use planning data, plumbing code information, new regulations, and climate change. The demand projections address all sectors, including projections for all types of customer water sales as well as authorized unbilled uses (for activities such as firefighting and line flushing) and water losses from the potable water system (real loss from the distribution system and apparent loss due to things such as billing errors). Potable water demands include water use projections for lower income residential demands.

Each water use sector was examined for a variety of factors, and then the information was aggregated into a comprehensive projection of customer water use through 2050. The total projections have been adjusted to account for anticipated "passive" water savings which result from new and existing local/state/federal ordinances and codes (such as the Model Water Efficient Landscape Ordinance, National Plumbing Code, CALGreen, and State Plumbing Code). To be conservative, the City did not reduce demand projections to adjust for anticipated active water savings from future customer participation in the City's ongoing water use efficiency program.

In support of this UWMP, EKI Environment and Water, Inc. (EKI) completed a detailed demand analysis which is summarized in this chapter where applicable. The full analysis by EKI, including a description of the methods used, is provided in **Appendix D**.

The demand analysis is also used in the assessments of water supplies in **Chapter 6** and long term water system reliability in **Chapter 7**.

4.2 Non-Potable Versus Potable Water Use

The City's potable water use and non-potable water use are served by different water supplies and have separate distribution systems. Therefore, past, current, and future water demands for potable water use and non-potable water use are discussed separately.

The City's potable water supply consists of surface water and groundwater that is safe to drink and meets or exceeds all state and federal drinking water standards

The City's non-potable water supply consists of tertiary treated disinfected recycled water, which is municipal wastewater that has been treated to a specified quality to enable it to be used for non-potable (non-drinking water) applications such as urban landscape irrigation. The City does not distribute other

types of non-potable water, such as untreated groundwater, remediated groundwater, or untreated surface water to its customers.

4.3 Past, Current, And Projected Water Use By Sector

The City delivers potable water to the following sectors: Single Family, Multi-Family, Commercial, Industrial, Institutional (and Governmental), Landscape, and Other (which includes municipal yard meter water service, construction water sales, and authorized unbilled uses such as firefighting and line flushing). The remaining potable water demand is captured in the distribution system loss sector described below in **Section 4.3.4**. For this 2025 UWMP, the City uses the same definitions for each sector as suggested in the DWR Guidebook and provided below.

4.3.1 Water Use Sectors Listed in Water Code

The City's potable water system serves these sectors:

- **Single Family Residential:** A single-family dwelling unit. A lot with a free-standing building containing one dwelling unit that may include a detached secondary dwelling.
- **Multi-Family Residential:** Multiple dwelling units contained within one building or several buildings within one complex.
- **Commercial:** A water user that provides or distributes a product or service.
- **Industrial:** A water user that is primarily a manufacturer or processor of materials, or an entity that is a water user primarily engaged in research and development.
- **Institutional (and Governmental):** A water user dedicated to public service. This type of user includes, among other users, higher education institutions, schools, courts, churches, hospitals, government facilities, and nonprofit research institutions.
- **Landscape:** Water connections supplying water solely for landscape irrigation. Such landscapes may be associated with multi-family, commercial, industrial, or institutional/governmental sites, but are considered a separate water use sector if the connection is solely for landscape irrigation.
- **Other:** Any water demand that is not adequately described by the water sectors defined above, including firelines and temporary construction and yard meters.

The City delivers non-potable recycled water to the Landscape sector (already defined above) within its urban boundary.

Within its urban system, the City does not provide sales of water to the following three sectors identified and defined as follows in the DWR Guidebook:

- **Sales to other agencies:** Water sales made to another agency.
- **Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.**
- **Agricultural:** Water used for commercial agricultural irrigation.

4.3.2 Water Use Sectors in Addition to Those Listed in Water Code

The City does not provide water to Water Use Sectors other than those listed in the Water Code.

4.3.3 Past Water Use

Past water use is provided for potable and non-potable supplies. These data were previously filed with the State DDW in mandated Public Water System Electronic Annual Reports.

The City's past use of potable water is summarized in **Table 4-1**. Historic drought conditions and the COVID-19 pandemic affected 2020-2022 water use. Following that, 2023 was an above average precipitation year. Therefore, the City does not consider these years to be representative of normal potable water use for the City.

TABLE 4-1: PAST POTABLE WATER USE BY SECTOR, AF

Water Use Sector	2020	2021	2022	2023	2024
Single Family	9,863	8,449	7,958	7,983	8,562
Multi-Family	3,309	2,984	3,078	3,261	3,438
Commercial	2,020	2,078	2,046	2,035	2,056
Industrial	304	320	307	329	326
Institutional/Governmental	308	276	300	297	313
Landscape	1,991	1,482	1,224	1,286	1,590
Other [(b)]	93	109	114	712	81
Other Non-Revenue Water (apparent losses, unbilled unmetered consumption) [(c)]	246	211	202	204	216
Distribution System Water Loss [(c)]	1,135	862	459	918	567
Total	**19,269**	**16,771**	**15,688**	**17,025**	**17,149**

(a) The City's urban water system does not provide potable water to agricultural customers.

(b) Water use in the "Other" sector includes use from firelines, construction, and yard meters. Yard meters record a combination of potable and recycled water use, where recycled water makes up approximately 4% of total use. Annual water use records from yard meters are reduced by 4% to estimate the approximate potable water use.

(c) From the American Water Works Association (AWWA) workbooks for the Water Loss Audit for each year.

The City's past use of non-potable (recycled) water in its urban setting is summarized in **Table 4-2.**

TABLE 4-2: PAST NON-POTABLE WATER USE BY SECTOR, AF

Water Use Sector[a]	2020	2021	2022	2023	2024
Single Family	—	—	—	—	—
Multi-Family	—	—	—	—	—
Commercial	—	—	—	—	—
Industrial	—	—	—	—	—
Institutional/Governmental	—	—	—	—	—
Landscape	110	117	97	112	89
Agriculture	—	—	—	—	—
Other	—	—	—	—	—
Losses[b]	—	—	—	—	—
Total	**110**	**117**	**97**	**112**	**89**

(a) The City's urban recycled water system serves connections that are dedicated to landscape irrigation.
(b) The recycled water system has not undergone a distribution system water loss audit.

A summary of the City's past use of potable and non-potable water use is summarized in **Table 4-3**.

TABLE 4-3: TOTAL PAST WATER USE, AF

Water Use Sector	2020	2021	2022	2023	2024
Potable	19,269	16,771	15,688	17,025	17,149
Non-Potable	110	117	97	112	89
Total	**19,379**	**16,888**	**15,785**	**17,137**	**17,238**

4.3.4 Distribution System Water Loss

The California Water Code requires water suppliers to include potable distribution system water losses for the preceding five years and to project potable water losses in five-year increments for at least 20 years in their 2025 UWMPs. Potable distribution system water losses (also known as "real losses") are the physical water losses from a supplier's potable water distribution system and storage facilities up to the point of delivery to customers. In the City's distribution system, the customer water meter is the point of delivery.

This section discusses the City's past, current (2025), and projected future potable distribution system water losses out to 2050.

As set forth in California Assembly Bill 1668 and Senate Bills 606 and 555, the State has adopted rules requiring urban retail water suppliers to meet volumetric performance standards for real water losses. These rules were adopted by the SWRCB in 2022 and became effective in 2023, with a compliance deadline of January 1, 2028.

The State has established a specific real loss target for each supplier, expressed in gallons per service connection per day. For the City, the assigned standard is 17.1 gallons per connection per day.[8] The City's average real loss for 2020-2024 is 13.4 gallons per connection per day. As such, the City anticipates it will achieve and maintain compliance with the State's volumetric performance standard for water loss by 2028 as required. **Section 9.2.6** provides additional information about the City's programs for assessing and managing real water loss.

The City's potable distribution system water losses for the preceding five years (2020-2024) were calculated annually using the AWWA Water Audit Method as required by the State with the adoption of Senate Bill 555 in 2015. As described in **Table 4-4**, the City submitted to the State an electronic copy of each annual audit of its potable distribution system's water losses for the calendar years 2020 through 2024, using DWR's online submittal tool. Each respective audit workbook can be downloaded directly from DWR's submission portal using the links in the table notes.

TABLE 4-4: WATER LOSS AUDIT REPORTING (DWR TABLE 4-5 RETAIL)

Public Water System ID # Reported in Table 2-1 R	Reporting Period (Calendar Year (CY))	Submitted to DWR Water Loss Audit Program
CA4910009	2020	Yes
	2021	Yes
	2022	Yes
	2023	Yes
	2024	Yes

NOTES:
Calendar Year (CY) 2020: https://wuedata.water.ca.gov/public/awwa_uploads/2618390738/Santa%20Rosa%20City%20of%20%5F%202020.xlsx
CY2021: https://wuedata.water.ca.gov/public/awwa_uploads/8844892203/Santa%20Rosa%20City%20of%20%5F%202021.xlsx
CY2022: https://wuedata.water.ca.gov/public/awwa_uploads/4000196158/Final%20Santa%20Rosa%20City%20of%202022.xlsx
CY2023: https://wuedata.water.ca.gov/public/awwa_uploads/6117261588/City%20of%20Santa%20Rosa%20CY2023%20%2D%20Validated%20Audit.xlsx
CY2024: https://wuedata.water.ca.gov/public/awwa_uploads/5419845402/City%20of%20Santa%20Rosa%20CY2024%20%2D%20Validated%20Audit.xlsx

As of the 2025 UWMP, urban water suppliers are no longer required to report the volume of water loss. Instead, the City must confirm submittal of annual water loss audits to the DWR, report its assigned real loss performance standard, and indicate progress toward meeting the 2028 compliance deadline established by Senate Bill 555. These requirements apply specifically to real losses (physical leaks from the distribution system) and not to non-revenue water, which also includes apparent losses and unbilled authorized consumption. To project future potable water losses through 2050, the City projected real and apparent losses based on the gallons per day per connection values calculated in the calendar year 2023 audit which was the most recent at the time the demand projections were finalized. The per connection values were multiplied by projected connections in each forecast year.

[8] State Water Resources Control Board, Individual System Water Loss Standards, August 7, 2025 (accessed online on 9-8-2025) www.waterboards.ca.gov

Table 4-5 summarizes real losses from the calendar year 2024 water loss audit and the City's assigned standard. **Table 4-6** summarizes apparent losses from the calendar year 2024 water loss audit and the City's assigned standard.

TABLE 4-5: PROGRESS TOWARDS 2028 WATER LOSS STANDARD (DWR TABLE 4-6 RETAIL, REAL LOSS)

Public Water System ID # Reported in Submittal Table 2-1 R	Did the Water Board Calculate a Water Loss Standard for this Public Water System?	State Water Board Standard		Most Recent AWWA Water Loss Audit		Real Water Loss Per Unit per Day
		2028 Real Water Loss Standard per Unit per day	Units for Real Water Loss	Number of Connections	Volume of Total Real Loss (from AWWA Water Loss Audit) (AF)	
CA4910009	Yes	17.1	Gallons per Service Connection per Day (GPSCD)	53,681	567.1	9.4
Notes: Most recent AWWA Water Loss Audit was for CY 2024.						

TABLE 4-6: PROGRESS TOWARDS 2028 WATER LOSS STANDARD (DWR TABLE 4-6 RETAIL, APPARENT LOSS)

Public Water System ID # Reported in Submittal Table 2-1 R	Did the Water Board Calculate a Water Loss Standard for this Public Water System?	State Water Board Standard		Most Recent AWWA Water Loss Audit		Apparent Water Loss Per Unit per Day
		2028 Apparent Water Loss Standard per Unit per day	Units for Apparent Water Loss	Number of Connections	Volume of Total Apparent Loss (from AWWA Water Loss Audit) (AF)	
CA4910009	Yes	3.5	Gallons per Service Connection per Day (GPSCD)	53,681	205.4	3.4
Notes: Most recent AWWA Water Loss Audit was for CY 2024.						

4.3.5 Current Water Use

This section includes current (2025) potable and non-potable water use. These data are based on meter reads and billing records that will be used for the City's Public Water System Electronic Annual Report for calendar year 2025, which will be submitted to DDW in 2026.

In 2025, the City served approximately 55,851 potable water connections. The majority, 90 percent, served residential land uses while approximately 5 percent served commercial, industrial, and institutional land uses. As shown in **Table 4-7**, the City's potable water customers are segregated into the following customer classes: Single Family Residential, Multi-Family Residential, Commercial, Industrial/Governmental, Institutional, Landscape, and Firelines. The City does not provide potable water for agricultural purposes. **Table 4-7** provides the number of potable accounts in each customer category currently served by the City.

TABLE 4-7: CURRENT POTABLE WATER CUSTOMERS (2025)

Sector	Number of Connections	Percent
Single Family Residential	46,356	83%
Multi-Family Residential	3,716	7%
Commercial	2,616	5%
Industrial	65	0.12%
Institutional/Governmental	230	0.41%
Landscape	1,564	3%
Firelines	1,304	2%
Total	**55,851**	**100%**

In 2025, the City served 32 non-potable (recycled) water connections, all of which were dedicated to landscape irrigation for multi-family residential and CII land uses. The City's urban recycled water system does not provide water for agricultural purposes. The number of active recycled water accounts currently served by the City in 2025 is shown in **Table 4-8.**

TABLE 4-8: CURRENT NON-POTABLE WATER CUSTOMERS (2025)

Sector	Number of Connections	Percent
Single Family Residential	-	-
Multi-Family Residential	-	-
Commercial	-	-
Industrial	-	-
Institutional/Governmental	-	-
Landscape	32	100%
Firelines	-	-
Total	**32**	**100%**

The City's current (2025) use of potable water is summarized in **Table 4-9.** 2025 (and 2024) demands reflect conditions closer to average than the preceding atypical years 2020-2023. As shown, the City's potable

water deliveries were treated to a level of "drinking water." The City did not supply wholesale potable water in 2025. The City's non-potable water deliveries (recycled water) are included in **Table 4-9**. Recycled water was treated to meet the State's Title 22 requirements for disinfected tertiary recycled water. As such, it is approved for all non-potable uses.

TABLE 4-9: TOTAL USES FOR POTABLE AND NON-POTABLE WATER - 2025 ACTUAL (DWR TABLE 4-1 RETAIL)

Use Type	Additional Description (as needed)	2025 Actual Water Use	
		Potable or Non-Potable (OPTIONAL)	Volume (AF)
Single Family		Potable	8,359
Multi-Family		Potable	3,472
Commercial		Potable	1,970
Industrial		Potable	349
Institutional/Governmental		Potable	324
Landscape		Potable	1,452
Landscape	Recycled Water	Non-Potable	74
Other (optional)	Fireline, Construction, Yard Meter	Potable	81
Other (optional)	Other Non-Revenue Water (apparent losses, unbilled unmetered consumption)	Potable	216
Distribution System Water Loss	Real losses	Potable	567
		Subtotal Potable	16,789.5
		Subtotal Non-Potable	74.1
		Total	**16,864**

NOTES: Real losses, apparent losses, and other authorized unbilled uses were estimated from the CY 2024 water loss audit.

4.3.6 Projected Water Use

This section provides projected potable and non-potable water use by sector in five-year increments through the year 2050. The City used the same sectors and definitions as outlined in the DWR 2025 Guidebook. Projected water use is summarized from the Water Demand Analysis; a detailed description of the methodology used to project water demand is included in **Appendix D**.

The water demand analysis includes water demand projections based on past water use, future population and employment projections, land use planning data, climate change, and plumbing code information. Potable demands include water use projections for lower income residential customers. Projected demands for potable water are shown in **Table 4-10.** Projected demands for recycled water are included in **Table 4-11.**

Potable water use projections have been adjusted to account for anticipated "passive" water savings which result from new and existing local and state ordinances and codes (such as the Model Water Efficient Landscape Ordinance, National Plumbing Code, CALGreen, and State Plumbing Code).

In addition to analyzing the passive savings, an analysis of the potential "active" potable water savings was conducted. The assessment of active water savings focused on customer participation in the City's water conservation programs. The water conservation measures selected for this analysis all had a benefit to cost ratio of greater than 1. To be conservative, the City did not reduce demand projections to adjust for anticipated active water savings. Anticipated future passive and active water savings are discussed in **Section 4.5** and estimated in **Table 4-14.**

The City offsets a small percentage (less than one percent) of its potable water demand using non-potable recycled water for urban landscape irrigation. Although the City may expand its urban recycled water delivery system in the future if needed and if funding is available, the City does not have plans to do so during the planning horizon of this UWMP. Therefore, the City does not project an increase in demand for recycled water in the urban setting through 2050, other than assuming a potential increase in demand (compared to the most recent ten-year average) at existing sites due to climate change.

TABLE 4-10: PROJECTED DEMANDS FOR POTABLE WATER (DWR TABLE 4-2 RETAIL)

Use Type	Additional Description (as needed)	Projected Water Use					
		Potable or Non-Potable	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Single Family		Potable	9,722	9,832	9,994	10,192	10,417
Multi-Family		Potable	3,763	3,872	4,006	4,158	4,323
Commercial		Potable	2,163	2,133	2,106	2,084	2,063
Industrial		Potable	343	338	334	330	327
Institutional/ Governmental		Potable	329	325	321	317	314
Landscape		Potable	1,907	1,991	2,075	2,159	2,243
Landscape	Recycled Water	Non-Potable	140	140	140	140	140
Other (optional)	Fireline, Construction, Yard Meter	Potable	112	113	114	115	116
Distribution System Water Loss	Real Losses	Potable	1,035	1,070	1,107	1,145	1,186
Other (optional)	Other Non-Revenue Water (apparent losses, unbilled unmetered consumption)	Potable	239.3	247.4	256.1	264.9	274.3
Subtotal Potable			19,613	19,921	20,313	20,765	21,263
Subtotal Non-Potable			140	140	140	140	140
Total			**19,753**	**20,061**	**20,453**	**20,905**	**21,403**

NOTES: Source: **Appendix D**, Table 5-5

4.3.7 Estimated Water Use for 2026-2030 Drought Risk Assessment

This section provides estimated potable and non-potable water use for the next five years (2026-2030). These demand estimates will be used to evaluate the reliability of the City's water supplies if a drought were to occur in the next five years, in accordance with CWC Section 10612. The estimated water use for 2026-2030 has been integrated into the DRA detailed in **Chapter 7**.

Potable water use estimates for 2026-2030 were based on actual water use for 2025 and projected water use for 2030 from **Appendix D**. Projected water use for 2030 includes anticipated population growth, known development projects, potential impacts of climate change, projected water losses, and water savings from

plumbing codes and local ordinances. The anticipated increase in water use between 2025 actual use and 2030 projected use was apportioned across the time period.

The 2026-2030 potable water use projections shown in **Table 4-11** provide a realistic representation of "unconstrained" water demand. Unconstrainted demand refers to the anticipated demand for water under normal conditions, without drought conditions and without any water shortage measures in place to reduce use.

TABLE 4-11: ESTIMATED POTABLE WATER USE FOR 2026-2030, AF

2026 Estimate[(a)]	2027 Estimate[(a)]	2028 Estimate[(a)]	2029 Estimate[(a)]	2030 Projected[(a)]
17,661	18,149	18,637	19,126	19,614

(a) Estimated water demand for 2026-2030 was based on apportioning the difference between actual 2025 use and projected 2030 demands from Table 4-6 in the EKI report, **Appendix D**.

The City does not anticipate an increase in non-potable water use demand, nor a decrease in supply. There are currently no plans to expand the urban recycled water system or the number of customers served currently within the existing system, and there is no plan to curtail the amount of water allocated to these customers (140 AFY). Therefore, estimated recycled water use for 2026-2030 has been projected at the maximum allotment of 140 AFY for the urban system consistent with planning-level estimates.

TABLE 4-12: ESTIMATED NON-POTABLE WATER USE FOR 2026-2030, AF

2026 Estimate	2027 Estimate	2028 Estimate	2029 Estimate	2030 Projected
140	140	140	140	140

4.4 Water Use For Lower Income Households

This section includes a discussion of projected water use for lower income households in the City's service area. The City does not have the ability to track residential water use by household income and can only roughly estimate the amount of projected water use for lower income households based on assumptions regarding the amount of lower income housing that currently exists in the City.

The City's Annual Action Plan for housing provides a concise summary of the actions, activities, and the specific federal and non-federal resources that were used each year to address the priority housing needs and specific housing goals identified by the City's Consolidated Plan for affordable housing. Recent data from the City's 2023–2031 Housing Element within the General Plan indicates that housing affordability challenges remain significant. For example, 44 percent of large family households are now classified as very low- or low-income, highlighting the ongoing need for targeted affordable housing strategies across a range of household types.[9]

[9] City of Santa Rosa, 2023-2031 Housing Element Adopted and Certified (March 28, 2023)

The City's General Plan projects that there will be 99,940 total housing units in the City by 2050.[10] Assuming the City has a similar breakdown of household income classifications in 2050 as it does today, then approximately 44 percent of the City's housing units (43,974 units) will be occupied by very-low-income and low-income households in 2050.

As discussed in **Section 4.1**, projected water use by customer sector is summarized in the Water Demand Analysis in **Appendix D**. The Water Demand Analysis projects water demand by sector for five-year increments for the years 2030-2050. The water demand of lower income households collectively is assumed to be 41 percent of the water demand for all single family and multi-family water use types through the planning horizon of this UMWP.

As indicated in **Table 4-13**, the City included lower income residential demands in the projected water demands out to 2045.

TABLE 4-13: INCLUSION IN WATER USE PROJECTIONS:
WATER CODE SECTION 10631 (A), 10631 (D)(4)(A), AND 10631 (D)(4)(B) (DWR TABLE 4-3 RETAIL)

Are Future Water Savings Included in Projections?	Yes
If "Yes" to above, **state the section or page number**, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found. ***Optional*** Suppliers may complete Optional Submittal Table 4-4 R to quantify the expected savings.	Appendix D, section 5.4
Are Lower Income Residential Demands Included In Projections?	Yes
Optional If the method for accounting Lower Income Residential Demands has been included, provide page number where this accounting can be found.	N/A

4.5 Estimating Future Water Savings

Although future job and population growth would be expected to increase water demand, water use reduction savings are projected to decrease per capita water use for future customers compared to historical customers.

As mentioned previously, passive water savings measures include plumbing codes, standards, and ordinances. In accordance with the National Plumbing Code, the City requires new buildings to be equipped with fixtures that meet high efficiency standards (as discussed in **Appendix D**). Senate Bill 407 requires high efficiency standards to apply to all new and replacement residential construction as of 2017 and to new and replacement commercial construction as of 2019. Passive water savings from these and other codes are incorporated in the Water Demand Analysis as described in detail in **Appendix D**.

[10] City of Santa Rosa General Plan 2050 (Adopted June 2025); https://www.srcity.org/392/General-Plan

Active measures include the City's water conservation programs. The City plans to continue to promote and implement a suite of cost effective conservation programs as described in Chapter 9 and discussed in the Water Demand Analysis (detailed in **Appendix D**), across the planning horizon of this UWMP.

Projected passive and active water savings in five-year increments through 2050 are summarized in **Table 4-14**. This table's "passive savings" row meets the requirements of DWR Table 4-4 Retail. Passive savings and active savings are expected to increase over the planning horizon of this UWMP. However, to be conservative, only passive water savings were applied to future demand projections.

TABLE 4-14: WATER DEMAND CUMULATIVE SAVINGS PROJECTIONS, AF

	2025	2030	2035	2040	2045	2050
Passive Savings (Plumbing Codes, etc.)[(a)]	506	1,531	2,079	2,57	3,031	3,471
Active Savings (Water Conservation Program B)[(b)]	1,134	1,976	2,322	2,589	2,785	[(c)]

(a) Reference EKI report, Table 5-5 (see **Appendix D**).
(b) Reference EKI report, Table 6-4 Baseline Scenario (see **Appendix D**).
(c) Not calculated in EKI report, Table 6-4 (see **Appendix D**).

4.6 Climate Change Considerations

California Water Code requires water suppliers to account for the impact of climate change on water demands, supplies, and supply reliability. A discussion of the effects of climate change on water demand can be found in this chapter. The effects of climate change on water supply can be found in **Chapter 6**. **Chapter 7** includes a discussion of the effects of climate change on water service reliability.

The water use factors used in the demand forecast are derived from water use during the 2017–2019 period, which reflects a rebound in demand following prior drought conditions and represents a higher level of use compared to recent (e.g., approximately 2023-2025) trends. This timeframe was selected to capture conditions consistent with hotter, drier weather expected under future expected climate change conditions. Incorporating these assumptions ensures that future planning accounts for increased variability, heightened temperature extremes, and the potential for greater stress on water resources driven by climate change impacts.

Climate change impacts in Sonoma County will affect the City's water supply and demand in numerous ways. According to *Climate Ready Sonoma County: Climate Hazards and Vulnerabilities*, a report prepared by North Bay Climate Adaptation Initiative for the Sonoma County Regional Climate Protection Authority[11], climate change is anticipated to affect Sonoma County in the following ways:

- **Higher average temperatures and more extreme heat events.** Sonoma County will experience a 250 percent increase in the number of very hot days (over 98.1 degrees) by 2050[12] and overall higher temperatures over a longer warm season. This could create a longer irrigation season, increase landscaping and irrigation water needs, increase the soil moisture deficit, and reduce

[11] North Bay Climate Adaptation Initiative, 2014. Climate Ready Sonoma County: Climate Hazards and Vulnerabilities. Prepared for Sonoma County Regional Climate Protection Authority, December 2014.
[12] Cal-Adapt (www.cal-adapt.org) using high-emissions scenario for 2050/mid-century (average of 2035–2064) and 2100/late century (average of 2070–2099) time periods compared to average conditions between 1961–1990

groundwater recharge. Industrial processes will have increased cooling water needs, and peak water demands may be impacted. While not anticipated to impact the City's water supply source, in some regions water quality may be impaired due to reduced baseflows.

- **More frequent and intense droughts.** By 2050, drought years are twice as likely to occur in any given year. Severe droughts that now only occur every 20 years will occur every ten years while 100 year droughts will occur every 20 years by 2100.[13] Whether the North Bay region experiences more or less rainfall overall, the land will likely be drier overall because warmer temperatures increase evapotranspiration (the loss of water from plants and soil into the air).

- **More variable rain and seasonality.** Sonoma County will likely continue to have some years of precipitation similar to historic averages interspersed with more extreme conditions. Sonoma County is likely to experience a shorter wet season with a later onset of fall rains and an earlier onset of the dry season causing a longer irrigation season and increased peak demand.[14] More intense rainfall over shorter periods could make it harder to capture and store water supplies.

- **Greater risk of extreme floods.** Sonoma County will see increased seasonal variability of precipitation, runoff, and stream flows, along with increased likelihood of "extreme" precipitation and drought events that were rare or unprecedented in the historic past. By 2050, it is predicted that Santa Rosa will experience a 67 percent increase in the number of extreme precipitation events (events with 2 day total of precipitation over 1.99 inches) to 2 or more events per year.[15] While not anticipated to impact the City's water supply sources, floodwater may degrade or contaminate surface and drinking water quality in some regions, which could make it difficult to capture sufficient water (in reservoirs or groundwater) during a compressed rainy season to supply an extended dry season.

- **More frequent and intense wildfires.** The risk of fire is likely to continue to rise due to increased dryness of vegetation, compounded by productivity of plants in the spring (which creates more fuel for dry season wildfires). Water impacts could include the need for water to suppress fires, and loss of infrastructure.

- **Sea level rise.** While not anticipated to impact the City's water supply sources, some regions may experience more frequent coastal flooding, increased erosion, and saltwater intrusion, which all have the potential to impact regional water supplies, supply reliability, and water quality.

Responding to climate change generally takes two forms: mitigation and adaptation. Mitigation is taking steps to reduce contributions to the causes of climate change by reducing GHG emissions. Adaptation is the process of responding to the effects of climate change by modifying systems and behaviors to function in a warmer climate. The City has implemented a suite of plans, programs, and projects pertaining to both. The City's mitigation and adaptation efforts have been consistently funded through its regular budgeting process for comprehensive asset management and capital improvement projects.

[13] Swain, Langenbrunner, Neelin, Hall, Nature Climate Change. 8, 427 (2018)
[14] Ibid.
[15] Ibid.

4.6.1 Climate Change Mitigation

The City has established municipal and communitywide GHG reduction targets to help mitigate climate change. Specifically, City Council adopted GHG reduction targets in 2005 that were more aggressive than the State of California's target. In addition, the City adopted a Declaration of Climate Emergency in January 2020, establishing a goal of reaching carbon neutrality by 2030. To ensure local and state targets are met, City Council adopted a communitywide Climate Action Plan (2012) and a Municipal Climate Action Plan (2013). Both plans were developed with input from the City's water department staff, and include GHG inventories of wastewater and water operations, as well as strategies for reducing GHGs from those operations. The communitywide Greenhouse Gas Reduction Strategy was adopted on June 3, 2025 by City Council. This strategy is an update to and replacement of the City's 2012 Community Climate Action Plan. The Reduction Strategy establishes a roadmap to reduce the community's GHG emissions to a minimum of 40 percent below 1990 levels by 2030, and 85 percent below 1990 levels by 2045, consistent with State-mandated emission reduction targets

The City is achieving water related climate change mitigation by reducing energy use, replacing fossil fuel-based energy sources with renewable energy sources, and implementing aggressive water efficiency and conservation programs that reduce energy associated with the movement, treatment, use, and discharge of water, and reduction in customer energy use associated with heating water.

As one of the largest energy consumers in the region, the City's Water Department has actively pursued energy efficiencies as part of its long-standing commitment to energy management and sustainability. In addition to implementing energy efficiency measures such as upgrades to pumps, lights, buildings, and facilities, the Water Department has completed comprehensive energy and process efficiency audits for City water facilities. The Water Department has established a goal of identifying the most cost-effective project portfolio for achieving energy independence. The Water Department has completed Energy Optimization Plans for all operations (water production and delivery, sewer collection and treatment, and water recycling), which has already resulted in implementation of a diverse group of projects that enhance energy efficiency and reduce energy demand. Additionally, projects have been identified that will increase renewable energy generation and improve energy management. Such projects will be further studied to assess implementation feasibility.

In addition, the Water Department has a five-year strategic plan (2023-2028) that includes initiatives to improve climate change adaptation. This plan has helped advance the operations of the Water Department toward its goal of energy independence, which includes further reducing dependence on fossil fuels and outside power providers. At the Laguna Wastewater Treatment Plant (LTP), the City uses 100 percent of the digester gas produced to generate about 11 million kilowatt hours of electricity each year using combined heat and power engines (47 percent of the Laguna Treatment Plant energy demand). The Water Department has also installed solar voltaic arrays on various sites to generate 65,000 kilowatt hours of electricity annually, which are used to power lighting, pumps, and equipment in its facilities. In October 2019, the Water Department opted into the "EverGreen" program portfolio offered by Sonoma Clean Power, the local community choice aggregation entity. The EverGreen program offers individual Sonoma Clean Power customers the option to purchase 100 percent renewable energy at a premium. The City Council chose to participate in EverGreen as part of the effort to reduce dependence on fossil fuels and help the City achieve its GHG reduction goals.

As described in more detail in **Section 9**, Demand Management Measures, the City has been and continues to be a leader in implementing innovative water conservation programs that reduce potable water demand and ensure that future water use is efficient. Programs are provided for all customer sectors. As a result of these efforts, the City's Water Use Efficiency programs have achieved a sustained water use reduction of 12,016 AF between 2010 and 2024 (see **Appendix D**).

4.6.2 Climate Change Adaptation

The City's climate adaptation actions have increased its climate change resilience. The City has implemented regional groundwater management planning, local emergency groundwater infrastructure improvements, drought management planning and implementation, water use efficiency programs, use of recycled water, the expansion of overflow/wet weather capacity at its wastewater treatment plant, and storm water and creek enhancements to ensure flood capacity, species buffer zones, and natural corridors for biodiversity.

The City is also adapting to the impacts of climate change by incorporating climate change into its water supply planning activities, including developing strategies to meet immediate, near- and long-term water supply needs. The City remains engaged in ongoing studies of localized climate change projections to assess the City's vulnerabilities and to identify strategies to cost effectively incorporate climate change considerations into long range planning and capital improvement plans.

5. SB X7-7 BASELINES, TARGETS AND 2020 COMPLIANCE

In November 2009, SB X7-7, the Water Conservation Act of 2009, was signed into law as part of a comprehensive water legislation package. The Water Conservation Act addressed both urban and agricultural water conservation. The legislation set a goal of achieving a 20 percent statewide reduction in urban per capita water use by December 31, 2020 (i.e.,"20 by 2020"). In order to meet the urban water use target requirement, each retail supplier was required to determine its baseline water use, as well as its target water use for the year 2020. Water use is measured in gallons per capita per day (GPCD). As described in the 2020 UWMP, the City met its 2020 target. The Water Code does not set an end date for reporting on progress in meeting the SB X7-7 target. DWR indicated that there was not sufficient time to conduct formal rulemaking to implement an end date to SB X7-7 reporting requirements before 2025 UWMPs were due. Thus, this 2025 UWMP includes this chapter which confirms that that City met its 2020 target, as shown in **Table 5-1** below.

The City achieved its 2020 target reduction both on an individual basis and as part of a Regional Alliance.

For its individual basis, the City selected SB X7-7's method 3 to calculate its 2020 target: 95 percent of the applicable State hydrologic region target as stated in the State's April 30, 2009, draft 20x2020 Water Conservation Plan.

In 2011, a Regional Alliance was formed between the cities of Santa Rosa, Rohnert Park, Sonoma, Cotati, and Petaluma, Town of Windsor, and North Marin, Marin Municipal, and Valley of the Moon Water Districts. Because the parties receive water from a common water wholesale supplier (Sonoma Water), the Regional Alliance was formed pursuant to the DWR Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use. The Regional Alliance successfully demonstrated compliance (113.41 GPCD actual) with the target (129.00 GPCD) in 2020. Further information on the methodology to calculate the target and baseline, as well as the Regional Alliance, can be found in the 2020 UWMP.

As part of the Regional Alliance, the City complied with the requirements of SB X7-7 on a regional basis. If compliance on a regional basis was unsuccessful, then the City would demonstrate compliance on an individual basis. As show in **Table 5-1** below, the City is compliant with its individual target also.

TABLE 5-1: SB X7-7 2020 TARGET PROGRESS (DWR TABLE 5-1 RETAIL)

Was Supplier part of a merger or consolidation since 2020?	Regional Alliance Target or Individual Target? Drop down list	2020 Target	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?
No	Individual Target	126	99	Yes

In 2024, DWR and SWRCB implemented reporting for the AB 1668 / SB 606 legislation, more commonly known as *Making Conservation a California Way of Life*. Reporting on compliance with this new program is not currently required for the 2025 UWMP, however a discussion of the City's programs and policies for water use efficiency is provided in **Chapter 9**.

6. WATER SUPPLY CHARACTERIZATION

This chapter assesses the City's potable and non-potable water supplies over short-term and long-term planning horizons and includes an analysis of the availability of each source out to 2050 under normal water year conditions. It also considers water supplies in a near-term drought (2026-2030) and discusses longer-term issues like climate change and regulatory revisions. The analysis examines each water source separately and then aggregates the information into a comprehensive picture of the City's current and future water supply reliability. **Chapter 7** considers the availability of water supply during single-dry water year conditions and dry five-year periods.

6.1 Purchased or Imported Water

The City purchases most of its potable water supply from Sonoma Water, pursuant to the Restructured Agreement for Water Supply (Restructured Agreement).

The Restructured Agreement defines the City's annual entitlement as 29,100 AFY and stipulates an average of 40.0 mgd from Reach 1, 2, and 3a of the Intertie Aqueduct, 40.0 mgd from the Santa Rosa Aqueduct, 4.0 mgd from the Sonoma Aqueduct, or a maximum combined average total of 56.6 mgd for a one month period from all aqueducts. The Restructured Agreement is dated June 23, 2006 and remains in effect until June 30, 2040.

Section 3.5 of the Restructured Agreement contains supply shortage provisions, which are further defined in the Water Shortage Allocation Methodology (Shortage Methodology), which was adopted by the Sonoma Water Board in April 2006. Both Section 3.5 of the Restructured Agreement and the Shortage Methodology take into account demand hardening associated with water conservation. Because the City has implemented an aggressive water conservation program over the past 30 years, it has one of the lowest per capita water uses among all of the water suppliers who purchase water from Sonoma Water. This is recognized by the Shortage Methodology, which encourages water conservation. Under the Shortage Methodology, if Sonoma Water's surface water rights and Russian River supply remain limited to 75,000 AFY and the Water Contractors' total demands reach Sonoma Water's 75,000 AFY available supply, then the City's allocation during a shortage would still be 29,100 AFY, the City's full entitlement under the Restructured Agreement.[16]

Sonoma Water is authorized to produce and deliver potable water for municipal and industrial purposes; prevent the waste or diminution of water supplies; control and conserve flood and storm waters to reduce potential damage to life and property; provide sanitary sewage services; provide recreational services in connection with flood control and water conservation activities; and levy taxes or fees for improvements necessary to conduct these activities. Sonoma Water operates under the direction of a Board of Directors that consists of the Sonoma County Board of Supervisors. The water system facilities of Sonoma Water are briefly described in **Chapter 3**. Potential constraints to this supply source are discussed in **Chapter 7**.

Sonoma Water delivers water on a wholesale basis to customers through its water transmission system. The primary water customers, collectively known as the Water Contractors, include the cities of Santa Rosa, Cotati, Petaluma, Rohnert Park, and Sonoma; the Town of Windsor; and the water districts of North Marin

[16] Letter from County of Sonoma's Board of Supervisors, April 2006.

and Valley of the Moon. The responsibility for supplying water to the Water Contractors is entrusted to Sonoma Water under the terms of the Restructured Agreement. Sonoma Water also provides water on a wholesale basis to and/or has authorized the exercise of its water rights by additional water purveyors, including but not limited to Marin Municipal Water District, Forestville Water District, and California American Water, Lawndale Mutual Water, Penngrove, and Kenwood Water companies.

Sonoma Water's primary source of supply is the Russian River. Sonoma Water manages water supply releases at Coyote Valley Dam, which impounds water in Lake Mendocino on the East Fork of the Russian River, and Warm Springs Dam, which impounds water in Lake Sonoma on Dry Creek (a tributary to the Russian River), to provide water supply and to maintain required minimum flows in the Russian River and Dry Creek. Flood control releases from Coyote Valley Dam and Warm Springs Dam are controlled by the United States Army Corps of Engineers. Flows in the Russian River have been historically augmented by Pacific Gas & Electric Company's (PG&E) Potter Valley Project, which diverts a portion of the Eel River flows to the East Fork of the Russian River. However, as discussed in Section 7.1.1.4, those augmented flows are proposed to be substantially reduced over the planning period of this UWMP update.

Sonoma Water's diversion facilities extract Russian River underflow, which is reported under Sonoma Water's surface water rights. Sonoma Water operates six radial collector wells adjacent to the Russian River (three at the Wohler production facility and three at the Mirabel production facility) and delivers it to its customers through an aqueduct transmission system consisting of storage tanks, pipelines and pump stations. Sonoma Water enhances production capacity during peak demand months by raising an inflatable dam on the Russian River near Mirabel that allows for operation of five infiltration ponds at Mirabel that increase the area of infiltration along the Russian River. Water pools behind the inflatable dam and is diverted into the infiltration ponds to recharge the aquifer in the vicinity of the Mirabel collectors. Backwater conditions along the river also result in increased infiltration in the Wohler area, thereby enhancing the production capacity of those collectors.

Sonoma Water holds appropriative water rights to Russian River and Dry Creek water by virtue of an assignment to Sonoma Water of Sonoma County's portion of the 1949 application to the State of California for the Coyote Valley Dam Project appropriative water rights, and Sonoma Water's 1960 application for the Warm Springs Dam Project appropriative water rights. The combined limit on Sonoma Water's annual Russian River diversions under its water rights permits (Permit Nos. 12947A, 12949, 12950, and 16596) is currently 75,000 AFY, with a maximum diversion rate of 180 cubic feet per second.

Sonoma Water also has three groundwater wells that provide water supply. They are located near the Laguna de Santa Rosa and feed directly into Sonoma Water's Russian River Cotati Intertie Pipeline. Sonoma Water estimates the current and future production capacity of these wells at 1,900 AFY.

6.1.1 Past and Current Contract Water

Since 1959, the City's primary source of potable water supply has been Sonoma Water. From the 1980s to 2007, it was the City's only source. In 2007, the City added groundwater wells to its potable water system to supplement supplies obtained from Sonoma Water and provide supply during high demand periods. The City's peak water demand year on record for contract water was 2004 (23,993 acre-feet). Over the past 10 years, the peak year for contract water was 2020 (18,024 acre feet).

Approximately 94 percent of the City's annual water supply has come from Sonoma Water. **Table 6-1** shows the volume of water purchased from Sonoma Water over the past five years (2021-2025).

TABLE 6-1: PAST AND CURRENT (2025) PURCHASED WATER, AF

Water Supply: Sonoma Water (surface water)				
2021	2022	2023	2024	2025
15,841	15,179	15,058	16,194	15,846

6.1.2 Future Contract Water

The City's annual entitlement for contract water from Sonoma Water is 29,100 AFY. As shown in **Table 6-2**, it is anticipated that Sonoma Water will meet the obligation to deliver 29,100 AFY out to 2050 under normal water year conditions. **Chapter 7** discusses dry year conditions and anticipated water supply.

TABLE 6-2: PROJECTED PURCHASED WATER SUPPLY AVAILABILITY, AF

Supply Source: Sonoma Water (surface water)				
2030	2035	2040	2045	2050
29,100	29,100	29,100	29,100	29,100

6.2 Groundwater

The City is located within the Santa Rosa Plain Subbasin (Subbasin) of the Santa Rosa Valley Groundwater Basin. Prior to 1960, the City relied primarily on groundwater from this Subbasin for its water supply, plus a small amount of surface water from Lake Ralphine. In June 1959, Sonoma Water began supplying surface water to the City and other Water Contractors. By the 1980s and until 2007, the City relied solely on purchased water deliveries from Sonoma Water to meet its water demands.

In July 2005, the City received permission from DPH (now DDW) to change the status of two of its standby wells permitted for emergency supply (Farmers Lane Wells No. W4-1 and W4-2) to full-time active status. These wells are now permitted for regular production of up to 2,300 AFY of potable supply. The City began using them for water supply in 2007. Including these two production wells, the City maintains a total of seven municipal groundwater wells within the Santa Rosa Plain Subbasin, in various states of production use, emergency use, irrigation only, in construction, and offline for rehabilitation.

6.2.1 Groundwater Basin Description

The City's Urban Growth Boundary overlies portions of two groundwater basins: the Santa Rosa Valley Groundwater Basin (specifically two of its Subbasins: the Santa Rosa Plain Subbasin and the Rincon Valley Subbasin) and the Kenwood Valley Groundwater Basin. **Figure 6-1** shows the urban growth boundaries for multiple municipalities in the Santa Rosa Plan Subbasin and underlying groundwater basins. Although the City's Urban Growth Boundary overlies portions of the Rincon Valley Subbasin and the Kenwood Valley

Groundwater Basin, the City's groundwater supply is derived exclusively from the Santa Rosa Plain Subbasin. The City does not currently derive any groundwater supply from the Rincon Valley Subbasin or the Kenwood Valley Groundwater Basin. **Table 6-3** provides an overview of the characteristics of the groundwater basins and Subbasins.

TABLE 6-3: CHARACTERISTICS OF GROUNDWATER BASINS/SUBBASINS UNDERLYING CITY OF SANTA ROSA URBAN GROWTH BOUNDARY

Groundwater Basin Name	Subbasin Name	DWR Basin Number	Surface Area
Santa Rosa Valley Groundwater Basin[(a)]	Santa Rosa Plain Subbasin	1-055.01	80,000 acres (125 square miles)
	Rincon Valley Subbasin	1-055.03	5,600 acres (9 square miles)
Kenwood Valley Groundwater Basin	None	2-019	5,135 acres (8 square miles)

Source: Department of Water Resources Bulletin 118, Groundwater Basin Descriptions, updated 2018.
(a) Other Subbasins include the Healdsburg Area and Alexander Valley Subbasins, located north of the City of Santa Rosa. However, because the City of Santa Rosa does not overlie any portion of these subbasins, they are not included here.

Brief descriptions of the Rincon Valley Subbasin and the Kenwood Valley Groundwater Basin are provided below to be inclusive of all Basins/Subbasins that the City's Urban Growth Boundary overlies. However, the remaining groundwater discussion will focus solely on the Santa Rosa Plain Subbasin. The groundwater basin descriptions were derived from the DWR Bulletin 118 (last updated in 2018)[17] with additional information obtained from:

- Evaluation of Groundwater Resources in Sonoma County Volume 2: Santa Rosa Plain (DWR, 1982)
- Geologic Map of the Santa Rosa Quadrangle (CGS, 1999)
- Santa Rosa Plain Groundwater Sustainability Agency, Groundwater Sustainability Plan (2022)

6.2.1.1 Santa Rosa Valley Groundwater Basin

The Santa Rosa Valley Groundwater Basin is one of the largest groundwater basins in DWR's North Coast Hydrologic Region and occupies a northwest trending structural depression in the southern part of the Coast Ranges of Northern California in Sonoma County. This depression divides the Mendocino Range on the west from the Mayacamas and Sonoma Mountains on the east. The Santa Rosa Valley Groundwater Basin has three alluvial subbasins: the Healdsburg Subbasin, the Santa Rosa Plain Subbasin, and the Rincon Valley Subbasin. Neither the Santa Rosa Valley Groundwater Basin, nor any of its subbasins, are adjudicated groundwater basins. None of the subbasins in the Santa Rosa Valley Groundwater Basin have been identified as overdrafted basins according to DWR Bulletin 118. Under the Sustainable Groundwater Management Act

[17] California Department of Water Resources, 2018.

(SGMA) Basin Prioritization classification, Healdsburg Subbasin and Rincon Valley Basin were designated as "low" priority and Santa Rosa Plain Subbasin was designated as "medium" priority.

As shown on **Figure 6-1**, the City overlies a portion of the Santa Rosa Plain Subbasin, the Rincon Valley Subbasin and the Kenwood Valley Basin. In September 2018, the City of Sebastopol requested a change in the Santa Rosa Plain Subbasin boundary to include the City of Sebastopol. DWR approved the request in February 2019.

The Santa Rosa Plain Subbasin (DWR Groundwater Basin Number 1-055.01) covers an area of 80,000 acres, or approximately 125 square miles. It is the largest subbasin of the Santa Rosa Valley Groundwater Basin and is characterized by low relief with an average ground surface elevation of approximately 145 feet above mean sea level.

The Santa Rosa Plain Subbasin is approximately 22 miles long and 0.2 miles wide at the northern end; approximately 9 miles wide through the Santa Rosa area; and about 6 miles wide at the south end of the plain near the City of Cotati. The Santa Rosa Plain Subbasin is bounded on the northwest by the Russian River plain approximately one mile south of the City of Healdsburg and the Healdsburg Subbasin. Mountains of the Mendocino Range flank the remaining western boundary. The southern end of the subbasin is marked by a series of low hills, which form a drainage divide that separates the Santa Rosa Valley from the Petaluma Valley basin south of Cotati. The eastern subbasin boundary is formed by the Sonoma Mountains south of Santa Rosa and the Mayacamas Mountains north of Santa Rosa.

The Santa Rosa Plain Subbasin is drained principally by the Santa Rosa and Mark West Creeks that flow westward into the Laguna de Santa Rosa. The Laguna de Santa Rosa flows northward and discharges into the Russian River. Annual precipitation in the Santa Rosa Plain ranges from approximately 30 inches measured at Climate Station Santa Rosa (USC00047965) in downtown Santa Rosa, and up to 50 inches per year in the Mayacamas and Sonoma Mountains. Approximately 93 percent of the annual precipitation falls between October and May. During the wet season, a large percentage of the rainfall falls during three or four major winter storms.

The Rincon Valley Groundwater Subbasin (DWR Groundwater Basin 1-055.03) occupies a small north to northwesterly trending structural trough located adjacent to the east side of the Santa Rosa Groundwater Subbasin. Rincon Valley is approximately seven miles long and has a width that varies from 0.5 to 2.5 miles.

Rincon Valley encompasses an area of 5,600 acres (approximately nine square miles) and is bounded by the Sonoma and Mayacamas Mountains, except to the southeast, where it is bounded by the Kenwood Valley Groundwater Basin, and on the southwest, where it is bounded by the Santa Rosa Plain Groundwater Subbasin. Rincon Valley is drained by Brush Creek, a tributary of Santa Rosa Creek.

This region is characterized by geologic complexity. Faults represent structural boundaries that limit lateral extent of geologic formations and groundwater movement. The major geologic formations comprising the Santa Rosa Plain and Rincon Valley Groundwater Subbasins are, from youngest to oldest, Younger Alluvium, Older Alluvium (alluvial fan deposits), the undifferentiated Glen Ellen, Huichica Formations and related continental deposits, the Sonoma Volcanics, the Wilson Grove (formerly Merced) Formation and the Petaluma Formation. The Tolay Volcanics may also be present in the subsurface. The groundwater subbasins are floored by low permeability rocks of the Franciscan Formation. A description of each of these units and their hydrogeologic properties is provided in **Table 6-4**.

In the GSP's Hydrogeologic Conceptual Model, there are two principal aquifer systems identified: shallow aquifer system and deep aquifer system. The two systems are separated by clay layers that act as barriers to flow and they are distinguished in their thickness and degree of continuity. In the shallow aquifer system, primary extractions are from domestic water supply wells and shallow agricultural or public supply wells. The shallow aquifer system is more closely connected to surface water in some areas, seasonally supporting water for riparian communities along many shallow surface waterways. The deep aquifer system is generally confined or semi-confined and does not have substantial connection to surface water. Extractions from this aquifer system are from a variety of users including domestic well owners in unincorporated areas of the Subbasin, agricultural wells used for crop irrigation, industrial and commercial wells, and public water supply wells for municipal and smaller public supply systems.

FIGURE 6-1: CITY OF SANTA ROSA BASINS

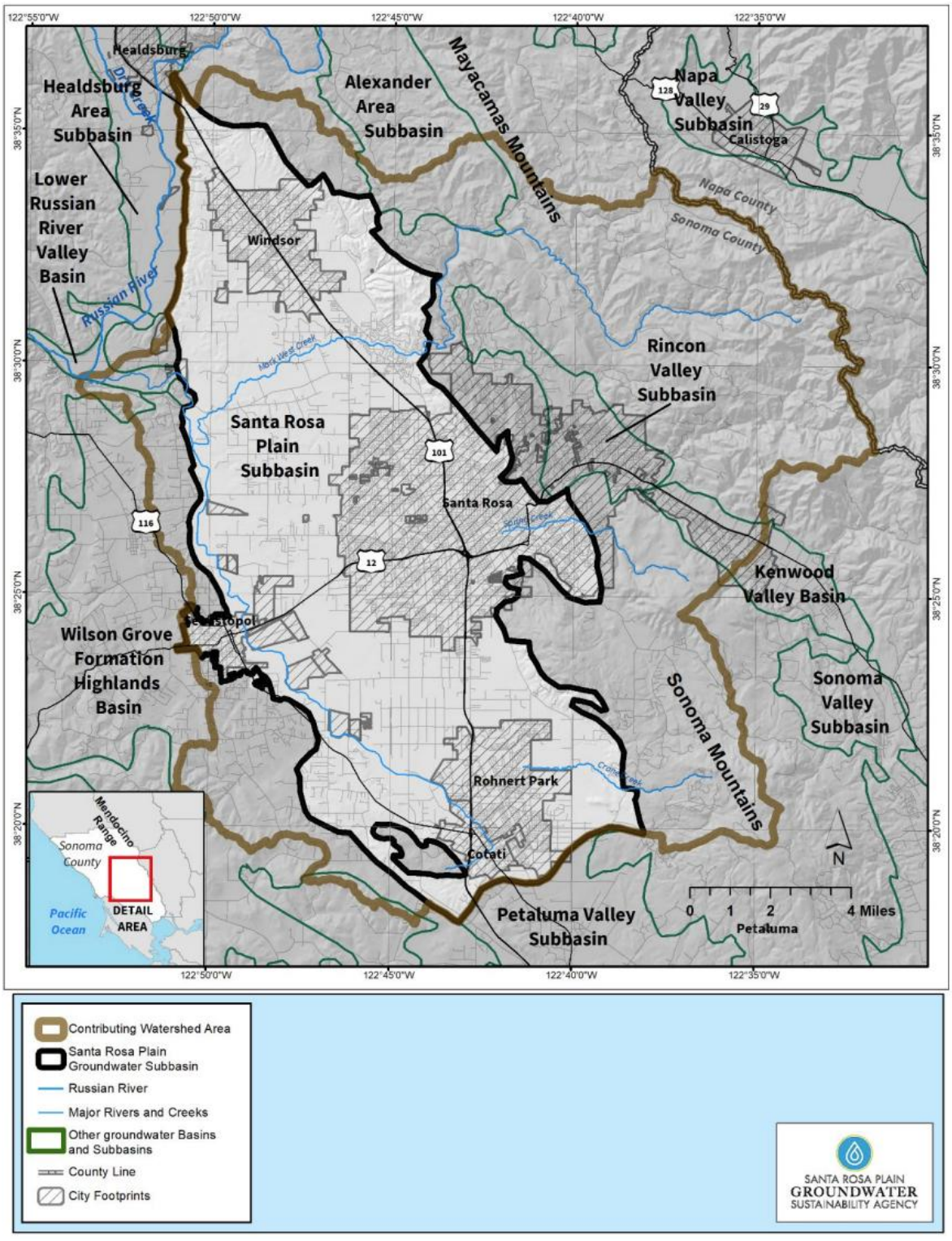


TABLE 6-4: SUMMARY OF GEOLOGICAL UNITS IN THE SANTA ROSA AND RINCON VALLEY GROUNDWATER SUBBASINS[A, B]

Geological Unit	Map Symbol[c]	Lithology	Specific Yield	Comments
Younger Alluvium	Q	Interbedded layers of sand, silt, clay, and gravel	Variable (3-15%)	May contain objectionable levels of iron and manganese above secondary drinking water standards.
Older Alluvium (Alluvial Fan Deposits)	Qo	Fine sand, silt, and silty clay, coarse sand and gravel, with gravel more abundant near fan heads	Moderate to high (8-17%)	Lenses of very fine sand. Minor amounts of methane gas. May contain objectionable levels of iron and manganese above secondary drinking water standards.
Glen Ellen and Huichica Formations and related, undifferentiated continental deposits	QT	Cemented gravel, sand, silt and clay, local interbedded tuff	Low (3-7%)	Generally low yields unless a substantial thickness of coarse gravel and sand is penetrated. May contain objectionable levels of iron and manganese above secondary drinking water standards.
Sonoma Volcanics	Psv	Volcanic flows, agglomerates, and tuffs	Highly Variable (0-15%)	Variable yields. Some water has high boron content. Some water is thermal. Zones of hydrogen sulfide (H_2S). May occasionally exceed secondary drinking water standards for iron and manganese.
Wilson Grove (formerly Merced) Formation	Pwg	Mostly marine coarse-to-fine grained sandstone with minor amounts of clay. Sandstone is typically yellow, gray, or buff-white in surface exposures and distinctively blue in subsurface cuttings	High (10-20%)	Lenses of very fine sand. Drillers' well logs generally describe this unit as blue sand, blue sandstone, cemented sand, or blue rock with some intervals of blue clay. Zones of high concentration of methane gas. May occasionally exceed secondary drinking water standards for iron and manganese. Water not as hard as other formations.

Geological Unit	Map Symbol[c]	Lithology	Specific Yield	Comments
Petaluma Formation	Pp	Mostly non-marine clay and shale with minor amounts of sandstone	Low (3-7%)	Generally low yields. Yields may be higher for wells penetrating lenses of coarse material. Wilson Grove and Petaluma formations deposited at about the same time – driller's logs indicate alternating layers of blue sandstone and blue clay. Zones of hydrogen sulfide (H_2S). May contain objectionable levels of iron and manganese.
Tolay Volcanics	Ttv	Volcanic flows, tuffs, breccias and agglomerates	Unknown	Variable yields. Fair to good water producer regionally.
Franciscan Complex	KJf	Mélange, including chert, sandstone, shale, greenstone, and serpentinite	Very low (<3%)	Low yields. Poor quality water in thermal and serpentinite areas. Good quality locally.

(a) Based on Table I in DWR Bulletin 118-4, Evaluation of Ground Water Resources Sonoma County, Volume 2: Santa Rosa Plain (September 1982).

(b) Based on Table 4 in Sweetkind, D.S., J.A. Hevesi, T. Nishikawa, P. Martin, and C.D. Farrar. 2013. "Hydrology of the Santa Rosa Plain Watershed, Sonoma County, California." Chapter B. In Nishikawa, Tracy, ed., Hydrogeologic and geochemical characterization of the Santa Rosa Plain watershed, Sonoma County, California. U.S. Geological Survey Scientific Investigations Report 2013-5118, pp. 27-112. https://pubs.usgs.gov/sir/2013/5118/

(c) Geologic Map of the Santa Rosa Quadrangle; 1:250,000, California Geological Survey, 1999.

6.2.1.2 Kenwood Valley Groundwater Basin

The Kenwood Valley Groundwater Basin (DWR Basin Number 2-019) is located east of the Santa Rosa Valley and the City of Santa Rosa in Sonoma County and covers an area of approximately 5,135 acres, or approximately eight square miles. Kenwood Valley occupies a portion of a small north to northwest trending structural trough located to the southeast of the Rincon Valley Subbasin.

The Kenwood Valley Groundwater Basin is approximately seven miles long and varies in width from less than one mile to about two miles at its widest point. The majority of the Kenwood Valley Groundwater Basin is bounded by the Napa-Sonoma Volcanic Highlands, except for the northwest side, where the Kenwood Valley is separated from the Rincon Valley Subbasin by Santa Rosa Creek.

The Kenwood Valley Groundwater Basin is drained by the Santa Rosa and Sonoma Creeks. The principal water bearing units in this groundwater basin are Alluvium and the Glen Ellen Formation (see descriptions above). Annual precipitation in Kenwood Valley ranges from about 36 to 44 inches. This basin is tapped for domestic use by the Kenwood Village Water Company for residents in the Kenwood area. It is not an adjudicated groundwater basin. It has not been identified as an over drafted basin and is not anticipated to become an over drafted basin according to DWR Bulletin 118.

6.2.2 Groundwater Management

Several municipal water purveyors, including the City and private parties, use groundwater within the Santa Rosa Plain Subbasin. These municipal water purveyors and the County are working collectively to better understand and manage the regional groundwater resources.

In 2009, the California legislature passed Senate Bill X7-6, requiring groundwater level monitoring for every groundwater basin and subbasin listed in DWR Bulletin 118. In response to the legislation, the California Statewide Groundwater Elevation Monitoring (CASGEM) Program was established. In December 2010, Sonoma Water and Sonoma County Permit and Resources Management Department (Permit Sonoma) notified the Department of Water Resources that they would be the Monitoring Entities for 13 of the 14 groundwater basins and subbasins located in Sonoma County. The City has been working collaboratively with Sonoma Water and Permit Sonoma to provide groundwater level data as required by CASGEM for monitoring wells within Santa Rosa's service area.

As part of a joint effort, the U.S. Geological Survey (USGS) partnered with Sonoma Water, the cities of Santa Rosa, Rohnert Park, Cotati, and Sebastopol, the Town of Windsor, California American Water, and others, to undertake a cooperative study. The objectives of this study were to: 1) Develop an updated assessment of the geohydrology, geochemistry and geology of the Santa Rosa Plain Subbasin; 2) Develop a groundwater flow model of the Santa Rosa Plain Subbasin; and 3) Evaluate the hydrogeologic impacts of alternative groundwater strategies for the Santa Rosa Plain Subbasin. Final results of the study were released in 2013, followed by the release of the surface water/groundwater model report in 2014.

The USGS study identified the following key findings from[18]:

- Groundwater Quality – Many wells in the Santa Rosa Plain Subbasin produce high quality water, but naturally occurring elements such as iron, manganese, boron, and arsenic are widely variable in groundwater and can pose problems in some areas. Areas in the southern Santa Rosa Plain Subbasin also exhibit increasing chloride concentrations. Groundwater underlying the City's service area generally meets primary and secondary drinking water standards for municipal use.

- Groundwater Level Trends – Groundwater trend data from the existing monitoring wells located throughout the Subbasin indicate that water levels within the main portion of the Subbasin have generally remained constant or have slightly increased over time, indicating that the Subbasin is in balance and is not suffering from overdraft.

- Groundwater Storage and Budget – The gross groundwater storage capacity for the basin is estimated to be about 948,000 AF. The water budget for the Santa Rosa Plain Subbasin (amount and sources of water entering versus the amounts and sources of water exiting the subbasin) has been estimated using a computer model of groundwater flow. The results indicate that over the 35-year period simulated by the model (1975 through 2010), more water exited the basin through a combination of groundwater pumping and natural outflows than entered the basin, resulting in an average annual loss of groundwater storage of approximately 3,300 AFY. The estimated storage loss is a relatively small percentage of the total storage in the basin.

[18] U.S. Geological Survey, Nishikawa, Tracy, ed., 2013.

In 2014, the State Legislature passed the Sustainable Groundwater Management Act (SGMA), requiring the formation of a Groundwater Sustainability Agency (GSA) and preparation of a Groundwater Sustainability Plan (GSP) to sustainably manage groundwater supplies. As mentioned, DWR identified the Santa Rosa Plain Subbasin as a medium priority groundwater basin that is not critically overdrafted as part of the 2019 Basin Prioritization effort.

In response to SGMA, local agencies worked together to form the Santa Rosa Plain GSA as a public agency in June 2017.

The Santa Rosa Plain GSA was formed through a Joint Exercise of Powers Agreement (JPA) entered into by the following entities in 2017, and later amended in 2019:

- City of Cotati
- City of Rohnert Park
- City of Santa Rosa
- City of Sebastopol
- Town of Windsor
- Gold Ridge Resource Conservation District
- Sonoma County
- Sonoma County Water Agency
- Sonoma Resource Conservation District
- And an organized group of mutual water and Public Utilities commission-regulated companies (Independent Water Systems)

The Santa Rosa Plain GSA has a Board of Directors, a plan manager, and an advisory committee. The appointed Board of Directors includes representatives from each entity that is part of the GSA. The appointed Advisory Committee is comprised of community members with diverse perspectives on beneficial groundwater use, including representatives from agriculture, the environmental community, the business community, rural residential well users, and public water suppliers. The Advisory Committee's purpose is to provide input and recommendations to the Santa Rosa Plain GSA Board of Directors on GSP development, implementation, and policies.

The Santa Rosa Plain Subbasin is ranked as a medium priority basin by DWR. Therefore, pursuant to SGMA requirements, the Santa Rosa Plain GSA submitted a GSP to DWR in January 2022, and the GSP was approved a year later in January 2023. The GSP establishes a suite of measures and management strategies to ensure the basin will achieve sustainability, as defined by state law, by 2042. The GSP defines sustainable management criteria thresholds and measurable objectives and includes an implementation plan to evaluate, monitor, and manage the Santa Rosa Plain Subbasin sustainably so as to avoid the six defined undesirable results listed in SGMA: chronic lowering of groundwater levels, reduction of groundwater storage, surface water depletion, water quality degradation, land subsidence, and seawater intrusion.

The City is a member of the Santa Rosa Plain GSA and will continue to participate as a member of the GSA during implementation of the GSP. Sustainability measures included in the GSP include:[19]

[19] https://santarosaplaingroundwater.org/gsp/

- Increased water conservation and efficiency
- Data and monitoring improvements
- Increased groundwater recharge
- Increased water recycling and reuse
- Integrated groundwater management with other water resources (such as stormwater)

In September 2013 the City adopted a Groundwater Master Plan (GMP). The overall objective of the City's GMP is to "provide a strategic road map for the City's Water staff, BPU, and City Council of how available groundwater resources could be most effectively used, in a sustainable manner, to meet the needs of the City's existing and future customers."[20]

The GMP provides background information on the City's historical use of groundwater, descriptions of ongoing studies, recommendations for an emergency groundwater supply plan, development of a key well monitoring network, and a conceptual evaluation of the potential use of aquifer storage and recovery wells. Included in the preparation of the GMP is the development of recommended groundwater policies designed to guide the future role of groundwater and promote balanced use and sustainability for the groundwater resources available to the City. Based on these recommended policies, specific groundwater projects and programs were identified and prioritized to implement the direction of the BPU. The GMP advanced the characterization and monitoring of groundwater conditions, and served as an initial study and planning of potential projects within the Subbasin.

In early 2022, the City started the process of developing a new plan to guide the City in its water supply options, including groundwater development. This new plan, entitled the Water Supply Alternatives Plan (WSAP), outlined various supply options including the development of new production wells, conversion of emergency wells to production wells and exploration of aquifer storage and recovery wells.[21] The WSAP supersedes the GMP, which identified new emergency groundwater supplies as the priority for the City. With the WSAP, the City anticipates developing new municipal supply groundwater wells, with a total goal of up to approximately 4,100 AFY by 2040, of which includes already existing groundwater supplies of 2,300 AFY.

GSP implementation is designed to build upon all existing efforts, at the City and GSA level, to manage groundwater within the Santa Rosa Plain Subbasin.

6.2.3 Overdraft Conditions

As noted above, the Santa Rosa Plain Valley Groundwater Basin and its subbasins are not adjudicated. Furthermore, the basin and its subbasins have not been identified as overdrafted and are not anticipated to become overdrafted basins according to DWR Bulletin 118.

Groundwater trend data analyzed in the GSP from the existing monitoring wells located throughout the Subbasin indicate that water levels within the main portion of the Subbasin have generally remained constant or have slightly increased over time, indicating that the Subbasin is in balance and is not suffering from overdraft. The GSP lays out a management process for ensuring a sustainable groundwater supply in

[20] West Yost Associates, City of Santa Rosa Groundwater Management Plan, Final Report, September 2013.
[21] https://www.srcity.org/OurWaterFuture

the future by improving the understanding of groundwater as a resource, measuring progress through metrics that will be monitored, actively implementing projects, adopting policies and management actions in response to groundwater conditions if they decline unacceptably, and developing the funding needed for long-term implementation.

6.2.4 Historical Groundwater Pumping

The City has a total of seven municipal groundwater wells within the Santa Rosa Plain Subbasin. These wells are listed in **Table 6-5** along with their current status

TABLE 6-5: CITY OF SANTA ROSA MUNICIPAL GROUNDWATER WELLS

Well Name/Number	Well Status
A Place to Play (W7)	In construction. Will be used for emergency potable purposes.
Leete (W1)	Offline for rehabilitation; used for emergency potable purposes.
Carley (W2-1)	Offline for rehabilitation; used for emergency potable purposes and some landscape irrigation. May be re-permitted as a production well.
Peter Springs (W2-2)	Offline for rehabilitation; used for emergency potable purposes, landscape irrigation and filling of a nearby lake.
Farmers Lane (W4-1)	Active Status[(a)]
Farmers Lane (W4-2)	Active Status[(a)]
Farmers Lane (W4-3)	Not connected to City's potable water distribution system; used strictly for minor landscape irrigation purposes.

(a) Change in status approved by California Department of Public Health (now Division of Drinking Water (DDW)) on July 20, 2005.

Prior to obtaining surface water supplies from Sonoma Water in 1959, the Farmers Lane production wells contributed a significant portion of the groundwater supplies required to meet the City's demands. Of the City's roughly 2,870 AFY of historical groundwater pumpage prior to 1959, it is estimated that the Farmers Lane Wells supplied about 1,720 AFY[22]. Once the City switched to Sonoma Water supply, the City's wells were put in standby mode. In 2007, the City began pumping water once again from Farmers Lane Wells No. W4-1 and W4-2 into the City's potable water system to supplement supplies obtained from Sonoma Water and to provide supply during high demand periods. **Table 6-6 (DWR Table 6-1)** shows the volume of groundwater pumped for potable supply for 2021 through 2025.

[22] Technical Memorandum, Evaluation of Potential Impacts Associated with Increased Groundwater Production from Farmers Lane Wells W4 1 and W4 2, prepared by West Yost & Associates, July 22, 2004.

TABLE 6-6: GROUNDWATER VOLUME PUMPED (DWR 6-1 RETAIL)

☐	Check the box if the Supplier does not pump groundwater. Proceed to the next table.						
☐	Check the box if all or part of the groundwater described below is desalinated. (OPTIONAL)						
Groundwater Type	Potable or Non-Potable	Location or Basin Name	2021 (AF)	2022 (AF)	2023 (AF)	2024 (AF)	2025 (AF)
Alluvial Basin	Potable	Santa Rosa Plain	1,324	1,057	1,234	1,001	1,326
		Total	1,324	1,057	1,234	1,001	1,326

6.2.5 Future Groundwater Pumping

As described in the GMP, the City intended to construct emergency groundwater wells throughout the City's water service area, including the Rincon Valley Subbasin and Kenwood Valley Groundwater Basin, to increase emergency groundwater supply resources[23]. However, with the adoption of the WSAP, the City has a renewed focus on new production capacity instead. This could include developing new groundwater wells, converting emergency wells to production, and exploration of aquifer storage and recovery (ASR) wells. Next steps towards this process include the development of California Environmental Quality Act analysis for new wells, a well siting study, and research into the feasibility of ASR. With the WSAP, the City anticipates developing new production groundwater wells, up to approximately 4,100 AFY including existing well capacity.

The projected groundwater availability in normal years in five-year increments through 2050 is shown in **Table 6-7**.

TABLE 6-7: PROJECTED GROUNDWATER SUPPLY AVAILABILITY, AF

Groundwater Type	Location or Basin Name	2030	2035[(a)]	2040[(a)]	2045[(a)]	2050[(a)]
Alluvial Basin	Santa Rosa Plain Subbasin	2,300	3,100	4,100	4,100	4,100
	Total	**2,300**	**3,100**	**4,100**	**4,100**	**4,100**

(a) Development of new wells is estimated and could be delayed or changed based on CEQA analysis, well siting study, and other factors.

[23] West Yost Associates, September 2013.

6.3 Wastewater and Recycled Water – Non-Potable Supply

The City's Water Department is responsible for the operation and management of the Santa Rosa Regional Water Reuse System (Regional System). The Regional System operates the Laguna Treatment Plant (LTP), oversees the Industrial Pretreatment Program, and operates and maintains the recycled water system for more than 225,000 residents and 6,500 businesses for the Cities of Cotati, Rohnert Park, Santa Rosa, and Sebastopol, and the South Park Sanitation District and portions of unincorporated Sonoma County. As managing partner of the Regional System, the City is responsible for operating the system economically and safely and for planning for future regulatory changes and growth.

Local water, wastewater, and planning agencies were consulted and participated in the development of the Regional System's Incremental Recycled Water Program (IRWP), which is the planning document developed to continually optimize the use of recycled water and offset demands on the potable water system. The agencies that participated in the development of the IRWP are listed in **Table 6-8**.

TABLE 6-8: AGENCIES PARTICIPATING IN INCREMENTAL RECYCLED WATER PROGRAM

Agency Type	Agency Name	Participated
Water Agencies	Cities of Cotati, Rohnert Park, Santa Rosa, Sebastopol, and Windsor; Sonoma County Water Agency	X
Wastewater Agencies	Cities of Cotati, Rohnert Park, Santa Rosa, and Sebastopol; South Park Sanitation District	X
Groundwater Agencies	None	
Planning Agencies	County of Sonoma; Cities of Cotati, Rohnert Park, Santa Rosa, and Sebastopol	X

6.3.1 Wastewater System Description

The City operates the LTP for the Regional System. **Figure 6-2** depicts the location of the wastewater treatment facilities and reclamation facilities for all the partners in the Regional System service area. LTP is a tertiary level treatment facility and is permitted for 21.34 mgd average daily dry weather flow. LTP takes wastewater from homes, businesses, and industry located within the Cities of Santa Rosa, Rohnert Park, Sebastopol, and Cotati, and the South Park Sanitation District. Over 500 miles of underground pipes bring wastewater to the treatment plant where water goes through three stages of treatment prior to disinfection, storage, and reuse. The water is treated to the highest non-potable water recycling regulations (Title 22 Tertiary). The volume of wastewater collected within the City's service area in 2025 is shown in **Table 6-9**.

FIGURE 6-2: CITY OF SANTA ROSA REGIONAL SYSTEM

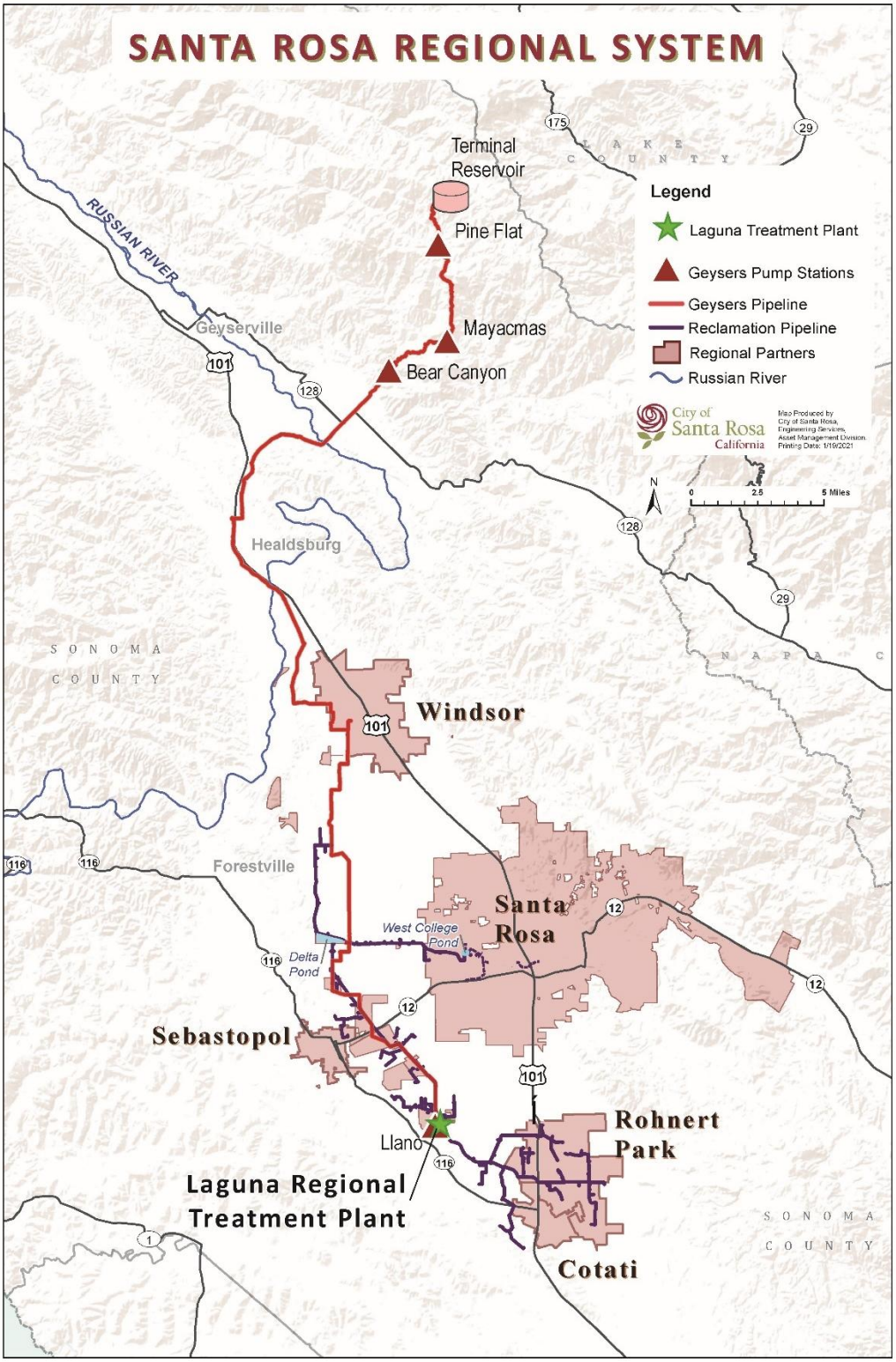


TABLE 6-9: WASTEWATER COLLECTED WITHIN SERVICE AREA IN 2020
(DWR TABLE 6-2 RETAIL)

☐	Check the box if there is no wastewater collection system. Proceed to the next table.
	Percentage of 2025 service area served by wastewater collection system (OPTIONAL)
	Percentage of 2025 service area population served by wastewater collection system (OPTIONAL)

Wastewater Collection			**Recipient of Collected Wastewater**	
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected from UWMP Service Area 2025 (AF)	Name of Wastewater Treatment Plant (WWTP) and Place ID Number	Is WWTP Located Within UWMP Area?
Santa Rosa Regional System	Estimated	21,973	Santa Rosa Laguna Subregional Water Reclamation Facility, Place ID 255703	No
Total Wastewater Received from UWMP Service Area in 2025:		21,973		

6.3.2 Wastewater Disposal and Recycled Water Uses

The Regional System's primary point of discharge is via the Delta Pond at the confluence of Santa Rosa Creek and the Laguna de Santa Rosa. The North Coast Regional Water Quality Control Board (NCRWQCB) regulates wastewater discharges from the Regional System. Under the NCRWQCB guidelines, tertiary treated water can be discharged only between October 1 and May 14. Discharge cannot exceed five percent of the Russian River flow.

The Regional System is one of the largest recyclers of water in Northern California. The recycled water that leaves the treatment plant is high quality, tertiary treated water that is safe for many reuse purposes, including irrigation of landscapes, agricultural crops, vineyards, playgrounds, golf courses, and public parks. Depending upon the amount of rainfall in any given year, approximately 98 percent of the Regional System's wastewater is recycled for urban landscapes and rural agricultural irrigation (approximately 6,000 acres of farmlands and vineyards), and the Geysers Recharge Project.

The Regional System provides recycled water to the City of Rohnert Park for its urban reuse program for irrigation at many Rohnert Park schools, parks, and businesses, as well as Sonoma State University. These uses are discussed in the City of Rohnert Park's UWMP.

In Santa Rosa, recycled water is used within the City's urban growth boundary for landscape irrigation at City facilities (including the municipal services center, bus transfer station, Finley Park, and A Place to Play sports complex), as well as multi-family residential complexes, institutions, and business parks.

Since the water recycling treatment plant opened in 1968, treated effluent production has increased from 2 mgd to an average of 18 mgd over the 2019-2024 period. The recycled water distribution system is supported by storage reservoirs that can hold over 1.65 billion gallons of water, which allows the system to meet peak, hot summer day irrigation requirements.

The current (2025) volumes of wastewater treated, discharged, and used as recycled water from the Regional System are shown in **Table 6-10**. The Regional System has not discharged treated wastewater for several years. It has been able to recycle all of the treated wastewater.

TABLE 6-10: WASTEWATER TREATMENT AND DISCHARGE WITHIN SERVICE AREA IN 2020 (DWR TABLE 6-3 RETAIL)

☐	Check the box if no wastewater is treated or disposed of within the UWMP service area.													
Wastewater Treatment Plant Name and Place ID Number	Does This Plant Treat Wastewater Generated Outside the UWMP Service Area? (OPTIONAL)	2025 Volume of Wastewater Received from UWMP Service Area (As Reported in Submittal Table 6-2 R) (AF)	Total 2025 Volume of Water Treated (AF)	**2025 Outcomes of Treated Wastewater**										
				Water Recycled Within UWMP Service Area (enter data as applicable)		**Water Recycled Outside of UWMP Service Area** (enter data as applicable)		**Effluent Discharge that is not a Permitted Recycled Water Use** (enter data as applicable)		**Required Discharge for Instream Flow** (enter data as applicable)		**Delivered to Another Entity for Additional Treatment** (enter data as applicable)		
				Treatment Level	Volume (AF)	Treatment Level	Volume (AF)	Treatment Level	Volume (AF)	Treatment Level	Volume (AF)	Treatment Level	Volume (AF)	Name of other entity
Santa Rosa Laguna Subregional Water Reclamation Facility, Place ID 255703	Yes	21,973	21,973	Tertiary	21,973		0		0		0		0	
Total		21,973	21,973		21,973		0		0		0		0	

6.3.3 Projected Uses of Recycled Water for Regional System

The Santa Rosa Regional Water Reuse System is an increasingly complex system that must work continuously to balance the wastewater disposal needs of a growing population with new government regulations, ongoing contractual obligations, and the varied demands of recycled water users.

Financial feasibility plays a significant role in determining the use of recycled water and implementation of recycled water projects. Recycled water distribution systems require additional pipelines, storage tanks, and pumps. Proximity to the production of the recycled water distribution system is a major factor affecting the financial feasibility of recycled water projects.

The City's current and historical use of recycled water for urban customers has been limited to areas within proximity to the Regional System's distribution network. In the last five years, the City has used on average 98 AFY of recycled water for urban landscape irrigation within the urban service area.

In 2001, the City undertook development of the IRWP and adopted the IRWP Master Plan in 2004. This included plans for recycled water urban reuse efforts and investigated several potentially new (and the possible augmentation of existing) recycled water uses, including urban reuse, agriculture, Geysers Recharge Project, and created wetlands. The IRWP outlined a water recycling alternative that could replace the City's potable water sources (not including private groundwater supply sources) up to a maximum of 2,200 AFY upon implementation and 4,400 AFY by 2020 depending on wastewater disposal capacity need.

In April 2005, the City began work on the City's Urban Reuse Project expansion conceptual plan, which analyzed several alternatives for expanded urban reuse within the City service area. In September 2006, the BPU approved contracts for pre-design of a phased urban reuse project with ultimate service to most of the south and west portions of the City, and a total delivery of 3,000 AFY to sites which would otherwise be served by potable water. In December 2007, the City approved the Santa Rosa Urban Reuse Project which could serve up to 3,000 AFY of recycled water to current and future approved water uses, primarily landscape irrigation. This project would be implemented in phases as needed for water supply offset and wastewater disposal capacity. The phased nature of the urban reuse alternative allows City policy makers to develop this water supply source incrementally as more supply is needed, while continuing to evaluate other potentially more cost effective water supply sources for future water supply needs.

The City selected Phase 1 West as the first phase of the Urban Reuse Project to be implemented. Phase 1 West was designed to provide up to 750 AFY of recycled water. The City initiated a small segment of this project in 2009. Based on the projected water supply and wastewater disposal capacity needs, it was determined that the City will not need to complete construction of Phase 1 West. Due in part to the City's success in reducing potable water demands and the projected continuation of water conservation practices, the City has determined that it is not cost effective to expand the recycled water distribution system through the UWMP planning period. However the City is always open to exploring new opportunities regarding water supplies and if the right opportunity were presented, the City would re-evaluate the expansion of the recycled water system.

The current and projected volume of recycled water to be beneficially used within the City's service area is shown in **Table 6-11**.

TABLE 6-11: RECYCLED WATER DIRECT BENEFICIAL USES WITHIN SERVICE AREA (DWR TABLE 6-4 RETAIL)

☐	Check box if recycled water is not used and is not planned for use within the service area of the supplier. The supplier will only complete the column on "Potential Recycled Water Use" and submit an accompanying narrative on the feasibility of that potential recycled water use.
Name(s) of Facility/ies Producing (Treating) the Recycled Water (OPTIONAL) :	Laguna Treatment Plant
Name of Supplier Operating the Recycled Water Distribution System (OPTIONAL) :	
Volume of Supplemental Water Added in 2025 (OPTIONAL) :	
Source of 2025 Supplemental Water (OPTIONAL) :	

Use Type	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL)	Additional Information (as needed)	2025 (AF)	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)	**Potential Recycled Water Use**	
									Vol-ume	Narrative page number (OPTIONAL)
Landscape irrigation (exc golf courses)	Non-Potable	Parks, medians, HOAs, Commercial landscapes, Multifamily residential common areas	74	140	140	140	140	140		
		Subtotal Potable	0	0	0	0	0	0	0	
		Subtotal Non-Potable	74	140	140	140	140	140	0	
		Total	74.1	140	140	140	140	140	0	0

Projections for total recycled water use for the Regional System were made in the City's 2020 UWMP. **Table 6-12** shows a comparison of the total projected 2025 recycled water use from the City's 2020 UWMP with the Regional System's actual recycled water use in 2025.

TABLE 6-12: 2015 UWMP RECYCLED WATER USE PROJECTION COMPARED TO 2020 ACTUAL (DWR TABLE 6-5 RETAIL)

☐	Check the box if recycled water was not used in 2025 nor previously projected for use in 2020.	
Use Type Drop Down list	2020 Projection for 2025 (AF)	2025 Actual Use (AF)
Landscape irrigation (exc golf courses)	140	74
Total	140	74

As part of the Santa Rosa Urban Reuse Project, the City instituted incentives for retrofitting existing potable irrigation water use to recycled water use. The incentives include a decreased user charge for recycled water customers and paying for the cost to retrofit existing potable water irrigation customers to recycled water use. In addition, the City adopted a Recycled Water Ordinance, granting the City the authority to require new connections to the water system to use recycled water for appropriate uses.

In addition, the City's wholesaler, Sonoma Water, encourages recycled water use by collecting, as part of its water rates, funds to be held in a special reserve for projects carried out by its water customers.

As described above, the City has determined that continued expansion of the Urban Reuse Project is not cost effective for the foreseeable future. Therefore, **Table 6-13** has not been completed beyond indicating the City does not plan to expand recycled water use in the future.

TABLE 6-13: METHODS TO EXPAND FUTURE RECYCLED WATER USE (DWR TABLE 6-6 RETAIL)

☑	Check the box if the Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
Section 6.3.3	Provide page location of narrative in the UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
		Total (AF)	0
		Unit Conversion to AF	0

6.3.4 Surface Water Rights

The City does not currently have, nor is it currently planning to develop, a source of surface water to meet future demand, independent of the water purchased from Sonoma Water (as described in **Section 6.1**).

6.4 Storm Water Diversions

The City of Santa Rosa and most development projects within the City must meet Regional Water Quality Control Board (RWQCB) requirements to reduce stormwater pollution, protect water quality of local waterways, and promote groundwater recharge. The City's stormwater requirements prioritize the use of infiltration-based landscape features for stormwater treatment. Low Impact Development (LID) features utilize the natural cleaning properties of soil, plants, and microbial activity to breakdown pollutants and allow for stormwater to recharge groundwater aquifers and maintain stream flow. These LID features are required on developments that create 5,000 square feet or more of impervious surface. Any increase in runoff volume from a developed site (for a storm up to 1 inch in a 24-hour period) must be infiltrated back into the soil or stored and reused on site. Additionally, runoff from all paved areas and rooftops must be filtered through these landscaped features to remove pollutants. These policies help to hydraulically mimic the undeveloped condition which provides aquifer recharge, preserves stream flow, cleans storm water, and reduces demand on potable water for irrigation.

As part of the WSAP, the City is exploring opportunities to divert and reuse stormwater for water supply purposes. Per the Storm Drain System Master Plan, four locations in Santa Rosa have been identified as ideal candidate sites for flood reduction and stormwater retention. Santa Rosa is exploring these sites through additional analysis for potential water supply purposes.

6.5 Desalinated Water

The City does not currently have, nor is it currently planning to develop, a desalinated water supply. Because the City's service area is too far from saline water sources, importing saline water for desalination and disposing of the resulting brine is not financially feasible. Furthermore, the local groundwater and surface water supplies do not require desalination.

As part of the WSAP, the City explored a regional partnership with nearby municipalities who have access to brackish water: City of Petaluma and Marin Municipal Water District (Marin Water). The City and Marin Water could partner in constructing a desalination facility to augment Marin Water's local water supply and the City's Sonoma Water supply via water exchanges. Provided that the desalination facility would be within the jurisdiction of Marin Water, an exchange could be completed where the City receives a portion of Marin Water's Sonoma Water allocation, and the desalinated water is used directly by Marin Water. Since the Sonoma Water aqueduct would be an integral component of operations, the exchange concept would not reduce reliance on the Sonoma Water system overall, but it would reduce overall reliance on the Russian River.

Regional and local desalination is not cost effective at this time, is resource intensive, faces significant regulatory and permitting challenges, and therefore there are no plans to move desalination projects forward during this UWMP period.

6.6 Water Exchanges and Transfers

Currently, the City does not transfer or exchange water with entities or third parties that are not also Water Contractors of Sonoma Water and does not anticipate that transfers or exchanges will happen with such parties in the future.

Water transfers and exchanges between Sonoma Water's Water Contractors are authorized under the Restructured Agreement and have occurred between Sonoma Water's Contractors in the past and may be necessary in the future.

6.7 Future Water Projects

As described in **Chapter 7**, the City will have sufficient supplies to meet the 2050 demand projections. However, to ensure supply availability and reliability, the City will continue to evaluate the potential to develop additional supplies including possible further utilization of the City's groundwater resources.

In addition to the two production wells (Farmers Lane Wells 1 and 2), described above, the City has several stand by emergency wells in rehabilitation. Since the mid 1990's, Santa Rosa has had an adopted Capital Improvement Program for the development of the City's groundwater resources to provide additional emergency groundwater supply suitable for potable use by the City. However, in early 2022, the City started the process of developing a new plan to guide the City in its water supply options, including groundwater development. This new plan, entitled the Water Supply Alternatives Plan (WSAP) outlined various supply options including the development of new production wells, conversion of emergency wells to production wells and exploration of aquifer storage and recovery wells.[24] This Plan supersedes the Groundwater Master Plan, which identified new emergency groundwater supplies as the priority for the City. With the WSAP, the City anticipates developing new production groundwater wells, up to approximately 3,100 AF in 2035 and 4,100 AFY starting in 2040 including the current groundwater supply of approximately 2,300 AF. **Table 6-14** represents the cumulative impact of known, planned projects through the WSAP.

In addition to new groundwater supplies, the City, through the WSAP, explored 18 different supply options ranging from new groundwater supplies, purified recycled water, desalinization, stormwater reuse, and enhanced water efficiency programs. From the initial screening, 11 options were deemed infeasible due to lack of available space, because regional efforts are already planned that pertain to that option, or they were deemed not to be cost effective. The remaining seven options were graded and ranked on:

- cost effectiveness,
- scalability,
- resiliency,
- equity,
- environmental performance,
- legal, permitting, and regulatory challenges,
- city control and interagency coordination,
- and multi-benefits.

From that screening, four portfolios of supply options were developed. Portfolio four "most adaptive" is currently being implemented by the City, which includes adding extraction wells, converting emergency wells to production wells, adding aquifer storage and recovery wells, and enhanced water efficiency programs. Consideration is given for potential future implementation of satellite direct potable reuse, regional direct potable reuse, and stormwater storage in aquifer.

[24] https://www.srcity.org/OurWaterFuture

As described in Sonoma Water's 2025 UWMP, additional water supply, water supply diversion facilities, and water supply transmission capacity are planned through 2050. Those future projects that may contribute to the City's water supply are summarized in Sonoma Water's 2025 UWMP.

TABLE 6-14: EXPECTED FUTURE WATER SUPPLY PROJECTS OR PROGRAMS (DWR TABLE 6-7 RETAIL)

	Check the box if there are no expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Proceed to the next table.						
☑	Check the box if some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.						
Section 6.7	Provide page location of narrative in the UWMP						
Name of Future Projects or Programs	Joint Project with other suppliers?		Additional Description (as needed)	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Supplier (This may be a range) (AF)
	(yes/no)	If Yes, Supplier Name					
Water Supply Alternatives Plan	No		See more details in **Section 6.7**	Potable	2035-2040	All Year Types	800 - 1,800
NOTES: There are other potential supply options that may be implemented. Future UWMPs will continue to be revised as new projections are known with more certainty.							

6.8 Summary Of Existing And Planned Sources Of Water

A summary of the City's existing sources of potable and non-potable water is provided in **Table 6-15** (DWR Table 6-8).

TABLE 6-15: WATER SUPPLIES – ACTUAL (DWR TABLE 6-8 RETAIL)

Water Supply		2025		
Category	Additional Description (as needed)	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL)	Actual Volume (AF)	Total Entitlement (OPTIONAL) (AF)
Purchased or Imported Water	Sonoma Water	Potable	15,846	
Groundwater (not desalinated)	City production wells	Potable	1,326	
Recycled Water	Santa Rosa Regional Reuse Facility	Non-Potable	74	
		Subtotal Potable	17,172	0
		Subtotal Non-Potable	74	0
		Total	17,246	0

A summary of the City's planned sources of water is provided in **Table 6-16 (DWR Table 6-9)**.

TABLE 6-16: WATER SUPPLIES – PROJECTED (DWR TABLE 6-9 RETAIL)

Water Supply	Potable or Non-Potable (after treatment if treated) (OPTIONAL)	Projected Water Supply (Report to the Extent Practicable)				
		2030	2035	2040	2045	2050
		Reasonably Available Volume (AF)	Reasonably Available Volume (AF)	Reasonably Available Volume (AF)	Reasonably Available Volume (AF)	Reasonably Available Volume (AF)
Purchased or Imported Water	Potable	29,100	29,100	29,100	29,100	29,100
Groundwater (not desalinated)	Potable	2,300	3,100	4,100	4,100	4,100
Recycled Water	Non-Potable	140	140	140	140	140
Subtotal Potable		31,400	32,200	33,200	33,200	33,200
Subtotal Non-Potable		140	140	140	140	140
Total		31,540	32,340	33,340	33,340	33,340

6.8.1 Estimated Supply for Drought Risk Assessment

This section provides estimated potable and non-potable water supplies for the next five years (2026-2030), assuming the hydrology is equivalent to the driest five-year period on record (1987-1991). These estimates

will be used to evaluate the reliability of the City's water service if a drought were to occur in the upcoming five years. These estimated water supplies for 2026-2030 under dry conditions have been integrated into the DRA detailed in **Chapter 7**.

Sonoma Water assessed its water supply for 2026-2030 assuming dry conditions equivalent to the driest five-year period on record (1987-1991). Sonoma Water determined it could provide supplies equal to unconstrained City potable demands (less the volume of groundwater supplies available) for each of the upcoming five years if a similar drought occurred.

The City assessed its potable groundwater supply availability for 2026-2030 assuming dry conditions equivalent to the driest five-year period on record. The City reviewed groundwater volumes it has extracted over the past ten years (2014-2024) for potable water supply, during the recent historic drought (2020-2022). The City considered the fact that its production wells were not impacted during that period and consistently returned to artesian conditions quickly even after continuous full time use over six to seven dry months each year, including during the recent historic drought. Therefore, the City's groundwater supply is not projected to have a shortfall in the upcoming five years. The City projects having 2,300 AFY of groundwater available.

Recycled water demands within the City (140 AFY) is less than one percent of the total recycled water production volume, and urban recycled water customers are prioritized for deliveries over other uses of recycled water to interruptible customers outside the City's urban area. During the recent historic drought (2020-2022), there was no reduction in deliveries of recycled water to urban customers. The City's source of non-potable water (recycled) is not projected to have a shortfall in the upcoming five years. The City projects having 140 AFY of recycled water available.

The 2026-2030 water supply projections for potable and non-potable water sources are shown in **Table 6-17**. These projections assume the years 2026 through 2030 will be hydrologically equivalent to the driest five-year period on record.

TABLE 6-17: 2026-2030 PROJECTED WATER SUPPLY, ASSUMING DRY CONDITIONS, AF

Supply	2026	2027	2028	2029	2030
Purchased Water (potable)	15,361	15,849	16,337	16,826	17,314
Groundwater (potable)	2,300	2,300	2,300	2,300	2,300
Non-potable (recycled)	140	140	140	140	140
Total	**17,801**	**18,289**	**18,777**	**19,266**	**19,754**

6.9 Climate Change Impacts to Supply

The City's water supply is not vulnerable to these climate change impacts listed in the Climate Change Handbook for Regional Water Planning[25]:

- No portion of the City's water supply comes from snowmelt.
- No portion of the City's water supply comes from the Delta, is imported from the Colorado River, or is imported from other climate-sensitive areas.
- No portion of the City's water supply comes from coastal aquifers, and salt intrusion has not been a problem in the past.
- Sonoma Water's water supply does not have difficulty in storing carry over water from year to year; the available storage volume can meet several years' water demand.
- The City has not experienced a drought that has caused it to not meet local water demands.
- The region does not have invasive species management issues at the water supply facilities.

Although the specific impacts listed above are not applicable to the City's water supply, Santa Rosa is expected to experience the effects of climate change including increased minimum and maximum temperatures, increased seasonality of precipitation, increased extreme heat in number of days and heat wave duration, increased extreme precipitation events including intensity and frequency, increased drought likelihood and increased wildfire risk and area burned.[26] These projected changes are likely to increase peak demand, increase extreme events such as landslides and flash flooding, increase stress in native vegetation providing additional fuel for wildfires, and impact the community through decreased tourism, increased demand for emergency services, and increase demand for public spaces and water dependent recreation that provide relief from extreme heat.

Sonoma Water has been funding a series of ongoing studies to evaluate the potential effects of climate change on Sonoma Water's water supply. The results of the studies may allow Sonoma Water to evaluate future climate change impacts on the water demands of the City, as well as other Water Contractors, and in turn provide the basis for future UWMPs. For additional information, see Sonoma Water's 2025 UWMP.

6.10 Energy Intensity

In accordance with CWC Section 10631.2(a), the energy intensity to provide water service to the City's customers over a one-year period is presented in this section to the extent that the information is available. The amount of energy to divert, pump, treat, and distribute the City's water supply within the system that it owns and operates is included.

Water energy intensity is the total amount of energy, calculated on a whole system basis, used to deliver water to the City's retail and wholesale customers for use. Energy intensity is the total amount of energy in kilowatt hour (kWh) expended on a per acre foot basis to take water from the City's source to its point of

[25] Climate Change Handbook, US Environmental Protection Agency and California Department of Water Resources, November 2011.
[26] Cal Adapt (https://cal-adapt.org) using high emissions scenario for 2050/mid-century (average of 2035-2064) and 2100/late century (average of 2070–2099) time periods compared to average conditions between 1961–1990.

delivery. Understanding the whole system energy intensity has allowed the City to make informed strategies in managing its water supplies and operating its system as follows:

- Identifying energy saving opportunities as energy consumption is a significant portion of the cost of delivering water;
- Calculating energy savings and greenhouse gas emissions reductions associated with water conservation programs;
- Applying for (and receiving) grants for energy efficiency efforts tied to water conservation programs;
- Informing climate change mitigation strategies; and
- Benchmarking of energy use at each water acquisition and delivery step and the ability to compare energy use among similar agencies.

In **Table 6-18** below, the energy intensity of the City's water service is calculated for 2024 as it reflects a typical year's energy use. The total energy intensity for the City's water service in 2024 was 206 kWh/AF.

TABLE 6-18: ENERGY INTENSITY – MULTIPLE WATER DELIVERY PRODUCTS (DWR TABLE O-1C)

Start Date of Reporting Period	1/1/2024	**Only for Water Delivery Products Under the Urban Water Supplier's Operational Control**							
End Date of Reporting Period	12/31/2024								
Is upstream embedded energy in the values reported?	No	**Water Management Processes**						**Non-Consequential Hydropower (if applicable)**	
Units of Measure for Water	AF								
		Extract and Divert	Place into Storage	Conveyance	Treatment	Distribution	**Total Utility**	**Hydropower**	**Net Utility**
Total Volume of Water Entering Each Process for All Product Types		1001				17196	17196		N/A
Retail Potable Deliveries (%)		100%				100%	Enter in Column C of table below		
Retail Non-Potable Deliveries (%)									
Wholesale Potable Deliveries(%)									
Wholesale Non-Potable Deliveries (%)									
Agricultural Deliveries (%)									
Environmental Deliveries (%)									
Other (%)									
Total Percentage [must equal 100%]		100%	0%	0%	0%	100%	N/A	0%	N/A
Total Energy Consumed by Each Process for All Product Types (kWh)		913,523				2,627,815	3,541,338		3,541,338
Energy Intensity (kWh/vol. converted to MG)		2800.1	0.0	0.0	0.0	469.0	N/A	0.0	N/A

Product Type	Delivery Volume by Product (volume units defined above)	Total Energy Intensity (kWh/volume)	Net Energy Intensity (kWh/volume)
Retail Potable	17,196	205.9	205.9
Retail Non-Potable		-	-
Wholesale Potable		-	-
Wholesale Non-Potable		-	-
Agricultural		-	-
Environmental		-	-
Other		-	-
Total of All Products	**17196**	**205.9**	**205.9**

As discussed in **Section 6.4**, the City operates a local wastewater collection system to collect wastewater within the City's water service area, a regional wastewater treatment system, and a recycled water system. The energy intensity associated with these systems for 2024 is provided in **Table 6-19**.

TABLE 6-19: ENERGY INTENSITY – WASTEWATER AND RECYCLED WATER (DWR TABLE O-2)

Start Date of Reporting Period	1/1/2024	**Only for Water Delivery Products Under the Urban Water Supplier's Operational Control**			
End Date of Reporting Period	12/31/2024				
Is upstream embedded energy in the values reported?	No	**Water Management Process**			
Units of Measure for Water	AF	**Collection / Conveyance**	**Treatment**	**Discharge / Distribution**	**Total**
Volume of Wastewater Entering Process (volume units selected above)		21,973			21,973
Wastewater Energy Consumed (kWh)		499,009			499,009
Wastewater Energy Intensity (kWh/volume converted to MG)		70	-	-	70
Volume of Recycled Water Entering Process (volume units selected above)			21,973	89	22,062
Recycled Water Energy Consumed (kWh)			28,437,717	2,193,923	30,631,640
Recycled Water Energy Intensity (kWh/volume converted to MG)		-	3,972	75,651	4,261

7. WATER SERVICE RELIABILITY AND DROUGHT RISK ASSESSMENT

This chapter describes the long-term reliability and vulnerability of the City's potable and non-potable water supplies under varying conditions. It considers the City's ability to meet water needs through 2050 under normal conditions, single-dry year conditions, and five consecutive dry year periods. In addition, this chapter meets the requirement to provide a Drought Risk Assessment (DRA) which considers water supply and demand under the assumption that the next five years (2026 2030) will experience a drought that is hydrologically equivalent to the driest five consecutive years on record. The water service reliability assessment through 2050 and the DRA for 2026-2030 combine the details of the water use analysis in **Chapter 4** and the water supply analysis in **Chapter 6**.

The City's planned and implemented water management tools for increasing the reliability of water supplies through 2050 are also addressed. Shorter term reliability responses for scenarios that may require immediate action during a severe dry period or a catastrophic supply interruption are addressed in **Chapter 8** and **Appendix F**. Ongoing demand management measures and water use efficiency programs that help ensure water is used wisely by customers during all water supply conditions are discussed in **Chapter 9**.

7.1 Constraints on Water Sources

This section addresses potential legal, environmental, water quality, and climatic effects on the reliability of water supply sources through the year 2050, which is the planning horizon of this UWMP. The City's water supply sources (contract water, groundwater, and recycled water) are each discussed separately

7.1.1 Sonoma Water Supply Constraints

An overview of the conditions that could affect Sonoma Water's water supply is provided below. Additional information about the reliability of Sonoma Water supply can be found in Sonoma Water's 2025 UWMP.

Various conditions may influence the water supply available to Sonoma Water. This section of the plan describes the water rights held by Sonoma Water and the City's entitlement to Sonoma Water's water supply. This section also describes the various physical and legal conditions that may influence the water supply availability, including the Biological Opinion (BO), issued by the National Marine Fisheries Service (NMFS) in 2008 and revised in 2025, and future operation of the Potter Valley Project (PVP). Finally, this section describes the process by which Sonoma Water determined how much water may be delivered through the 2050 planning period under normal, single-dry, and dry five-year period hydrologic conditions.

7.1.1.1 Water Rights of Sonoma Water

Four SWRCB permits[27] currently authorize Sonoma Water to store water in Lake Mendocino (up to 122,500 AF) and Lake Sonoma (up to 245,000 AF) and to divert and redivert 180 cubic feet per second (cfs) of water from the Russian River, up to 75,000 AFY.

The permits also establish minimum instream flow requirements for fish and wildlife protection and Russian River recreational considerations. These minimum instream flow requirements vary according to the hydrologic cycle (i.e., dry water years versus normal water years) defined by the SWRCB's Decision 1610.

[27] State Water Board Permit Numbers 12947A, 12949, 12950, and 16596.

Sonoma Water meets the various instream flow requirements set by Decision 1610 by making releases from Coyote Valley Dam and Warm Springs Dam. As required by the BO, Sonoma Water has applied to the SWRCB to make changes to the minimum instream flow requirements of Decision 1610. The BO requirements are discussed below.

Sonoma Water also has three groundwater wells that provide water supply. They are located near the Laguna de Santa Rosa and feed directly into Sonoma Water's Russian River Cotati Intertie Pipeline. Sonoma Water estimates the future production capacity of these wells at 2,300 AFY.

7.1.1.2 Restructured Agreement

The Restructured Agreement was executed in 2006, and generally provides for the finance, construction, and operation of existing and new diversion facilities, transmission lines, storage tanks, booster pumps, conventional wells, and appurtenant facilities. The Restructured Agreement currently provides the contractual relationship between Sonoma Water and the City and includes the City's various rights to water service, including specific rates of delivery and maximum amounts of water that Sonoma Water is obligated to supply to the City. The Restructured Agreement defines the City's entitlement as 29,100 AFY and an average of 40.0 mgd from Reach 1, 2 and 3a of the Intertie Aqueduct, 40.0 mgd from the Santa Rosa Aqueduct, 4.0 mgd from the Sonoma Aqueduct, or a maximum combined average total of 56.6 mgd for a one month period from all aqueducts.

Though the City's existing supply from Sonoma Water is relatively reliable, the Restructured Agreement contains provisions in Section 3.5 which may be implemented in the event of a supply shortage. The shortage provisions are further defined in the Water Shortage Allocation Methodology (Shortage Methodology), which was initially adopted by the Sonoma Water Board in April 2006.[28] The Restructured Agreement Section 3.5 provisions and the Shortage Methodology are designed to take the demand hardening associated with water conservation into account. The City has implemented an aggressive water conservation program over the past 35 years and has one of the lowest per capita water uses among all Sonoma Water customers. This is recognized by the Shortage Methodology which encourages water conservation. Under the Shortage Methodology, if Sonoma Water surface water rights and Russian River supply remain limited to 75,000 AFY and the Water Contractors' total demands reach Sonoma Water's 75,000 AFY available supply, then the City's allocation would still be 29,100 AFY, the City's full entitlement under the Restructured Agreement.[29]

7.1.1.3 Threatened and Endangered Species

On October 31, 1996, NMFS published a final notice of determination listing coho salmon as threatened under the federal Endangered Species Act (ESA) within the Central California Coast Evolutionarily Significant Unit (ESU), which includes the Russian River. On August 18, 1997, NMFS published a final notice of determination listing steelhead as threatened under the ESA within the Central California Coast ESU, also including the Russian River. On September 16, 1999, NMFS listed the California Coast ESU of Chinook salmon as threatened.

[28] John O. Nelson Report, April 2006.
[29] Letter from Sonoma County Board of Supervisors, April 2006.

In accordance with Section 7(a)(2) of the ESA, federal agencies must consult with the United States Fish and Wildlife Service and/or NMFS (depending on the species) to "ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat…." (50 CFR Section 402). The operation of Warm Springs and Coyote Valley dams and Sonoma Water's rubber dam and fish screens all fall within the provisions of Section 7 of the ESA. In December 1997, the US Army Corp of Engineers (USACE), as the federal sponsor of the above two flood control and water supply projects, and Sonoma Water, as the local sponsor, entered into a Memorandum of Understanding with NMFS to begin the Section 7 consultation process. As part of the Section 7 consultation, a Biological Assessment was prepared to study the impact of current and potential future operations of facilities on the listed species in the Russian River. The final Biological Assessment was completed in September 2004.

As part of the Section 7 consultation process, the NMFS formed Biological Review Teams to conduct a status review of the three listed fish species by assembling the best available information on the condition of the fish species and quantifying risks faced by each ESU. Using the results of the status review, NMFS reevaluated the listing of the three fish species. On June 28, 2005, NMFS issued a final rule listing the status of coho as endangered and maintaining the threatened status of California Coast Chinook salmon. On January 5, 2006, NMFS issued a final determination listing the steelhead as threatened.[30]

On September 24, 2008, NMFS issued the first BO with the second issued on April 29, 2025. Both Biological Opinions analyzed the impacts of the current operation of the Warm Springs and Coyote Valley Dams as well as other facilities operated by the USACE, Sonoma Water, and the Russian River Flood Control and Water Conservation Improvement District in the Russian River Watershed for the subsequent 15 years. The 2008 BO determined that the continued operation of some aspects of the flood control and water supply operations will have substantial adverse effects on both the coho salmon and steelhead but are not likely to impact the survival and recovery of the Chinook salmon in the Russian River. The three areas of most concern are the high summertime flows in the Russian River and Dry Creek, the high velocity of water in Dry Creek in the summer, and the current practice of breaching the sandbar at the estuary during the summer months.[31]

In the 2008 BO, NMFS collaborated with the USACE and Sonoma Water to develop a Reasonable and Prudent Alternative, including eight Reasonable and Prudent Measures (RPMs), to implement over a 15-year timeframe to avoid jeopardy to the coho salmon and steelhead. The RPMs include the following: interim and permanent changes to the summertime flows in the Russian River and Dry Creek; changing the management of the Jenner estuary; restoring fish habitat along Dry Creek; conducting a feasibility study of constructing a pipeline to deliver water from Lake Sonoma to the mainstem of the Russian River; strengthening and expanding the existing coho broodstock program; installation of a new back up water supply pipeline to the Warm Springs Hatchery and construction of additional rearing facilities for the coho broodstock program; and monitoring of habitat and fish in the Russian River, Dry Creek, and the Jenner estuary.

[30] National Marine Fisheries Service, Southwest Region, Biological Opinion for Water Supply, Flood Control Operations, and Channel Maintenance conducted by the U.S. Army Corps of Engineers, the Sonoma County Water Agency, and the Mendocino County Russian River Flood Control and Water Conservation Improvement District in the Russian River watershed, September 24, 2008.
[31] Sonoma County Water Agency, Russian River Instream Flow and Restoration, The Biological Opinion: Frequently Asked Questions, October 2008.

Fish habitat restoration work and monitoring have been steadily implemented, under review by NMFS. On October 4, 2018, NMFS reported in a letter to USACE that implementation of Dry Creek habitat restoration work has been "tremendously successful to date" and has allowed "critical water supply and dam safety operations to continue unconstrained while also producing demonstrable benefits to the three ESA listed salmonid species that inhabit the watershed."[32]

The 2008 BO also provides an Incidental Take Statement for the taking of the coho, steelhead and Chinook that may occur due to the implementation of the continued operations of the flood control and water supply operations and the associated RPMs.

The 2008 BO originally required, and was reaffirmed by the 2025 BO, the following temporary and permanent changes to the minimum instream flows in the Russian River and Dry Creek:

During Normal Years:

- Reduce the minimum flow requirement for the Russian River from the East Fork to Dry Creek from 185 cfs to 125 cfs between June 1 and August 31; and from 150 cfs to 125 cfs between September 1 and October 31.
- Reduce the minimum flow requirement for the Russian River between the mouth of Dry Creek and the mouth of the Russian River from 125 cfs to 70 cfs.
- Reduce the minimum flow requirement for Dry Creek from Warm Springs Dam to the Russian River from 80 cfs to 40 cfs from May 1 to October 31.

During Dry Years:

- Reduce the minimum flow requirement for the Russian River between the mouth of Dry Creek and the mouth of the Russian River from 85 cfs to 70 cfs.

In September 2009, Sonoma Water filed a petition with the State Water Board to permanently change the minimum instream flow requirements as outlined by the BO. The petition is currently pending at the State Water Board and will not be acted on until Sonoma Water has completed compliance with CEQA. Until the petition is acted upon by the State Water Board, Sonoma Water will have to file a Temporary Urgency Change petition with the State Water Board to reduce the minimum instream flows during the months of May through October as required by the BO.

The reduced flows required by the RPMs would provide enough water for Sonoma Water to meet existing water demands. The RPMs allow for restoration of fish habitat in Dry Creek to continue flows of 130 to 175 cfs to meet the water demands of Sonoma Water.[33] However, the BO clarified that, if the restoration work was not sufficiently effective, Sonoma Water would have to explore other alternatives, including a bypass pipeline. To be proactive and prudent, Sonoma Water released a draft feasibility study of a bypass pipeline in April 2011 and a final study report on September 15, 2011.

[32] Letter from Sam Rauch, Deputy Assistant Administrator for Regulatory Program, National Marine Fisheries Service, to Lt. General Todd Semonite, Chief of Engineers, and James Dalton, Director of Civil Works, United States Army Corps of Engineers, October 4, 2018.
[33] Sonoma Water, October 2008.

In anticipation of the expiration of the 2008 Biological Opinion in September 2023, Sonoma Water worked with NMFS, USACE, and CDFW to reinitiate consultation and develop a Biological Assessment for continuation of the USACE and Sonoma Water operations in the Russian River watershed. A draft Biological Assessment was submitted to NMFS and CDFW on December 9, 2022.[34] A final Biological Assessment was submitted to NMFS and CDFW on September 5, 2023 and further revised and clarified by subsequent letters and information from the USACE and Sonoma Water.[35] The USACE supplemented the BA with additional Proposed Actions pursuant to a November 7, 2024 settlement agreement in White v. United States Army Corps of Engineers 3:22-cv-06143-JSC (N.D. Cal.).[36] A second BO was issued on April 29, 2025 and has a ten year term.[37]

Key elements of the Proposed Action evaluated in the new 2025 BO include continued habitat enhancement efforts in Dry Creek, revised Russian River Estuary adaptive management, studies to learn more about migration and survival of hatchery and wild salmonids, reservoir flood control and water supply operations at Coyote Valley Dam (Lake Mendocino) and Warm Springs Dam (Lake Sonoma), and time-limited changes to the Russian River Hydrologic Index (water year classifications) to be based on Lake Mendocino storage thresholds rather than Lake Pillsbury storage in the Eel River watershed, and request, via interim petitions, changes to Decision 1610 minimum flows during Normal and Dry hydrologic conditions in a manner consistent with the Reasonable and Prudent Alternative from the 2008 BO. USACE and Sonoma Water will also be required to continue habitat enhancement efforts in Dry Creek including adaptive management, completion of an additional mile of restoration and long term maintenance of already completed projects by Sonoma Water. The Revised Russian River Estuary Adaptive Management Plan requires habitat enhancement including construction of three to five acres of estuarine habitat enhancements targeting juvenile steelhead rearing.

The 2025 BO concluded that the Proposed Action is not likely to jeopardize the continued existence of Central California Coast coho salmon, California Coastal Chinook salmon, Central California Coast steelhead, or Southern Resident Killer Whale (newly added species in 2025 Biological Opinion), nor is it likely to destroy or adversely modify their designated critical habitat, marking a significant change due to improvement in operations and conservation measures from the 2008 BO which was a jeopardy opinion. Next steps for Sonoma Water include forming Technical Advisory working groups on reservoir operations, turbidity, Dry Creek habitat enhancement, Dry Creek joint monitoring, Estuary adaptive management, and survival studies.

In August of 2016, Sonoma Water released the Fish Habitat Flows and Water Rights Project (Fish Flow Project) Draft Environmental Impact Report (DEIR) for public review. The Fish Flow Project objectives include managing Lake Mendocino and Lake Sonoma water supply releases to provide instream flows that improve habitat for threatened and endangered fish species and updating Sonoma Water's existing water rights to reflect current conditions. The Fish Flow Project would change Sonoma Water's water right permits related to flows and diversions from the Russian River and Dry Creek. The new minimum instream flow requirements proposed by the Fish Flow Project were developed to meet the requirements of the 2008 and 2025 Biological Opinion to improve habitat for threatened and endangered salmonid species. The Fish Flow

[34] Sonoma Water, Russian River Biological Opinion Update, Water Advisory Committee meeting, May 1, 2023.
[35] Environmental Science Associates, Biological Assessment and Essential Fish Habitat Assessment, August 2023.
[36] White v. United States Army Corps of Engineers, District Court, N.D. California, October 23, 2023.
[37] National Marine Fisheries Service, West Coast Region, Endangered Species Act Section 7(a)(2) Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for the Russian River Watershed Water Supply and Channel Maintenance Project, (April 29, 2025).

Project does not propose to increase or otherwise change the quantities of surface water that Sonoma Water diverts under its water right permits, to obtain any new authorizations for new rights, or to construct new facilities.[38] In response to release of the Draft EIR, Sonoma Water received numerous comment letters from the public and resource agencies. Based on extensive public input, Sonoma Water is currently working on revisions in anticipation of recirculating the Draft EIR.[39]

7.1.1.4 Future Operation of the Potter Valley Project

Built in 1908, the PVP is a 9.4-megawatt hydropower project located on the Eel River and the East Branch of the Russian River in Mendocino and Lake Counties, about 15 miles northeast of the City of Ukiah. PVP features include Lake Pillsbury, a 76,876 AF storage reservoir impounded by Scott Dam, and Van Arsdale Reservoir, a 700 AF storage reservoir impounded by the Cape Horn Diversion Dam. At Van Arsdale Reservoir, a portion of the water is diverted south to the 9.2-megawatt Potter Valley Powerhouse by a series of tunnels, conduits, and penstocks that discharge into the East Branch of the Russian River which flows into Lake Mendocino where it is released and contributes various beneficial uses of water and minimum instream flow requirements in the Russian River below Lake Mendocino. The PVP is owned and operated by Pacific Gas and Electric Company (PG&E) and is governed by a Federal Energy Regulatory Commission (FERC) license that expired on April 14, 2022. In April 2017, PG&E initially notified FERC of its intent to renew its hydropower license.

At the request of several interested entities, a PVP Ad Hoc Committee was convened by U.S. Representative Jared Huffman to enable dialogue on the terms of a potential new license. The Ad Hoc Committee is comprised of over 25 federal and state resource agencies, local counties, tribes, and environmental organizations. Participating stakeholders committed to reaching a "Two Basin Solution" with co-equal goals of improving fish passage and habitat on the Eel River and minimizing adverse impacts to water supply reliability, fisheries, water quality, and recreation in the Russian River and Eel River basins.[40]

On January 25, 2019, PG&E filed a notice of withdrawal of its Notice of Intent (NOI) and pre-application document (PAD), indicating it was discontinuing efforts to relicense the hydroelectric project. On March 1, 2019, FERC issued a Notice Soliciting Applications for any party interested in filing a license application for a new license, stating any party interested in seeking a new license needed to file an NOI and PAD by July 1, 2019. In response, a coalition of interests from Humboldt, Mendocino, and Sonoma Counties (the Two-Basin Solution Partnership) undertook an effort to determine the feasibility of re-licensing the PVP. The Two-Basin Solution Partnership consisted of the following entities: California Trout, the County of Humboldt, the Mendocino County Inland Water & Power Commission, the Round Valley Indian Tribes, and Sonoma County Water Agency (Sonoma Water). Ultimately, the Two Basin Solution Partnership was unable to provide the necessary studies and information as required by FERC to re-license the project and PG&E decided to surrender its FERC license. With the project license now expired, PG&E is now operating on an annual license which will continue to be issued by FERC throughout the surrender process.

In May 2023, Sonoma Water convened the first meeting of the Russian River Water Users Forum comprised of water users that are dependent on PVP water to improve the understanding of water reliability uncertainties, help organize the water users, and eventually create a source of funding for continuing water

[38] Sonoma Water, Fish Habitat Flows and Water Rights Project Draft Environmental Impact Report, August 2016.
[39] Sonoma Water, May 1, 2023.
[40] https://www.twobasinsolution.org/

transfers through the PVP and/or water supply planning and project implementation in the Russian River watershed.[41]

Building off the work by the Russian River Water Users Forum, in late 2023, the California Department of Fish and Wildlife (CDFW), California Trout, Humboldt County, Mendocino County Inland Water and Power Commission (IWPC), Round Valley Indian Tribes (RVIT), Trout Unlimited, and Sonoma Water requested that PG&E consider a proposal for the Cape Horn Dam and Van Arsdale Diversion, called the New Eel-Russian Facility (NERF). NERF is governed by the coequal goals of improving fish migration and habitat on the Eel River and maintaining water diversion from the Eel River to the Russian River. To achieve these goals the Eel-Russian Project Authority (ERPA) was formed by a joint exercise of powers agreement between County of Sonoma, Sonoma Water, and Mendocino Inland Water and Power Commission.[42] ERPA will have the power to negotiate with PG&E as the utility moves forward with plans to surrender operation of the PVP and will also have the legal capacity to own, construct, and operate a new water diversion facility.

Two potential new water diversion facility alternatives were identified by ERPA – a Roughened Channel and a Pump Station alternative. After the Roughened Channel alternative scored fewer points based on biological feasibility, habitat and water quality, resiliency, cost, and more, the Pump Station alternative was selected by ERPA. The Pump Station will remove a large portion of the dam and fish barrier to the level of the existing riverbed downstream, construct a new pump station to pump Eel River water to the existing Van Arsdale Diversion via a pipeline, and install an array of screens to divert water and to screen fish. The project will also include the removal of the current Van Arsdale fish screens.

In February 2025, a Memorandum of Understanding (MOU) was entered into by the CDFW, California Trout, ERPA, Humboldt County, IWPC, RVIT, Sonoma Water, and Trout Unlimited, to state the proposed terms for a Water Division Agreement for the NERF for 30 years with an option to extend another 20 years. The MOU describes support for the transfer of the Project's appropriative water rights from PG&E to ERPA with the transfer of the rights to RVIT immediately after the closing with PG&E. ERPA will continue to operate NERF to divert flow from the Eel River, with the remaining water available under the appropriative water rights for instream beneficial uses per RVIT. ERPA will pay RVIT $1,000,000 annually for use of these water rights to operate NERF in addition to a Restoration Payment of up to $1,000,000 annually in recognition of RVIT's agreement to forbear asserting federally reserved water and fishing rights against ERPA during the term of the lease. By signing the MOU, the parties confirm their commitment to continuing efforts to finalize a Water Diversion Agreement by July 29, 2025. The final Water Diversion Agreement was signed on July 16, 2025 and contains terms substantially consistent with the MOU.

If the PVP diversions were to cease altogether, there is the possibility that some regulatory requirements could redirect to Lake Sonoma. Sonoma Water has begun work on a viability assessment of utilizing Forecast Informed Reservoir Operations (FIRO) at Lake Sonoma. If successful, there is a possibility that Sonoma Water could work with the USACE to update the water control manual for Lake Sonoma to achieve the ability to store more water in certain scenarios. It is possible that this operational change could offset some of the potential impacts to Lake Sonoma from diminished diversions from the PVP.

[41] https://russianriverwaterforum.org/
[42] https://www.eelrussianauthority.org/

7.1.1.5 Water Reliability Modeling For 2025 UWMP

Sonoma Water modeled the reliability of its water supply system for the Water Contractors' use in preparing individual 2025 UWMPs. For both the normal (1999), single dry year (1977), and dry five-year period (1987-1991) scenarios, the modeling results indicated that there would be adequate water supply to meet 100 percent of the projected demands for Sonoma Water, including demands from the City of Santa Rosa.

Sonoma Water modeled the impact of the single-dry year scenario for 1977 and projected the results for the Upper Russian River and Lower Russian River systems as follows:

- **Lake Mendocino**: For the single-dry year scenario, the modeling results indicated Lake Mendocino storage levels decline to the lowest level that water can be released from the reservoir for all the 2035 through 2050 single dry year scenarios. During this period, downstream demands and minimum instream flow requirements are not met due to depleted reservoir storage and inadequate inflow into the reservoir. This result is mainly attributed to assumptions in Eel River diversions associated with PG&E's decommissioning of the Potter Valley Project. Sonoma Water would need to request reductions in minimum instream flow requirements, coupled with significant demand reductions by water users that divert water from the Upper Russian River, to prevent Lake Mendocino from reaching deadpool. However, the City is not an Upper Russian River water user; therefore, these results do not directly affect water supply reliability for the City.

- **Lake Sonoma**: There are no expected shortages in Lake Sonoma in any conditions including single dry year, multiple dry years, or drought years. However, if a water supply condition were to occur, water would be allocated among the Water Contractors in conformance with the adopted Shortage Methodology in accordance with Section 3.5 of the Restructured Agreement, as described above.

7.1.2 Groundwater Supply Constraints

The City's current groundwater supply from the Farmers Lane wells is constrained by the existing pumping capacity and operations protocol which are based on an assumption that the Farmers Lane wells can be operated as much as 40 to 70 percent of the time at a pumping rate of 2,000 gpm. The estimated annual pumpage quantity is also constrained based on the limited information available regarding annual natural recharge to the area. However, the wells have historically returned to artesian condition quickly each year, even after continuous use for up to eight months per year, including each year of the recent historic drought (2014-2016 and 2020-2022).

As mentioned in **Chapter 6**, the USGS completed a study of the Santa Rosa Plain Groundwater Subbasin in 2013, in collaboration with Sonoma Water, the cities of Cotati, Rohnert Park, Santa Rosa and Sebastopol, the town of Windsor, the County of Sonoma, and the California American Water Company. The Santa Rosa Plain Groundwater Subbasin Groundwater Sustainability Plan (GSP) relied heavily on the USGS study for basin characterization, while also providing additional basin information. Key findings from these documents are described below along with other available data with respect to groundwater quality, groundwater level trends, and groundwater storage and budget.

7.1.2.1 Groundwater Quality

The GSP summarizes the localized groundwater quality issues across the Santa Rosa Plain Subbasin based on concerns and trends observed through various studies and regulatory programs, including:

- DWR periodic sampling of private wells (1950s to 2010)
- Groundwater Ambient Monitoring and Assessment (GAMA) studies of public water-supply wells (Kulongoski et al. 2006) and private domestic wells (Bennett et al. 2014)[43]
- USGS 2013 study, Chapter C (Martin et al. 2013)[44]
- 2013 Salt and Nutrient Management Plan (SNMP) (City of Santa Rosa 2013)[45]
- Data from regulated public water-supply system sampling
- Regulated contaminant sites

The GSP finds that groundwater quality is generally suitable for beneficial uses, but localized impairments exist due to natural geologic conditions and anthropogenic activities such as agriculture, urban development, and industrial operations. The 2013 USGS study highlights that many wells in the Santa Rosa Plain Subbasin produce high quality water, but naturally occurring elements such as iron, manganese, boron, and arsenic are variable in groundwater and can pose problems in some areas.

Areas of elevated arsenic concentrations are most notable in the northeastern portions of the Subbasin, immediately south of the City of Santa Rosa, in the vicinity of the City of Sebastopol and along the Trenton Fault near Mark West Creek. Many areas of higher arsenic concentrations appear to be associated with known or inferred faults.

Elevated total dissolved solids (TDS) levels may result from both natural sources and land use sources. The Santa Rosa Plain Subbasin exhibited increasing chloride concentrations in the 2013 USGS study, but the GSP found that these have since stabilized. Nitrate is typically associated with runoff from agricultural practices, but it was not found to be a concern in the majority of wells across the Subbasin. The Subbasin contains various regulated contaminated release sites that are under an active cleanup order by the SWRCB. However, only a small number of the public and private wells sampled as part of the GAMA program had very low-level detections of volatile organic compounds and/or pesticides, but all detections were significantly below the contaminant's respective maximum contaminant levels.

The major-ion composition of groundwater is controlled by the natural chemistry of the recharge water, geochemical reactions in the unit the water is stored in, and anthropogenic factors. Most groundwater in the Subbasin is bicarbonate-type water and ranges from sodium-potassium-type water to calcium-magnesium-type water. Additionally, water samples from wells completed within the shallow aquifer system generally exhibit greater proportions of calcium and magnesium, while deep aquifer samples exhibit greater proportions of sodium and potassium.[46]

[43] Bennett, G.L., and M.S. Fram. 2014. Groundwater-quality Data in the North San Francisco Bay Shallow Aquifer Study Unit, 2012: Results from the California GAMA Program. U.S. Geological Survey Data Series 865. https://pubs.usgs.gov/ds/0865/pdf/ds865.pdf

[44] Martin, P., L.F. Metzger, J.N. Densmore, and R.A. Schroeder. 2013. "Groundwater quality and source and age of groundwater in the Santa Rosa Plain watershed, Sonoma County, California." Hydrogeologic and geochemical characterization of the Santa Rosa Plain watershed, Sonoma County. Tracy Nishikawa, ed. U.S. Geological Survey Scientific Investigations Report 2013-5118, pp. 113-165. https://pubs.usgs.gov/sir/2013/5118/pdf/sir20135118.pdf

[45] City of Santa Rosa. 2013a. Santa Rosa Plain Salt and Nutrient Management Plan. Prepared by Woodard & Curran in association with Plan Tierra. March. https://srcity.org/DocumentCenter/View/15217/Salt-and-Nutrient-Management-Plan

[46] California Department of Water Resources, Evaluation of Ground Water Resources in Sonoma County Volume 2: Santa Rosa Plain, DWR Bulletin 118 4, 1982.

According to a DWR study of the Subbasin, few wells tested for water quality contained constituents over the recommended concentration for drinking water. Some wells produced water with aesthetic problems such as elevated concentrations of iron and manganese, or high hardness. Some private well owners questioned about groundwater quality reported complaints about the color and/or taste of the water. Although high iron, manganese, and hardness have been reported in groundwater for some portions of the Santa Rosa Plain Subbasin, the overall quality of groundwater in the Subbasin is good[47]. The sustainable management criteria for groundwater quality in the GSP are established to be protective of federal and state drinking water quality standards.

Groundwater underlying the City's service area generally meets primary and secondary drinking water standards for municipal use. The City's Farmers Lane wells have historically exhibited slightly elevated concentrations of both iron and manganese, exceeding secondary drinking water standards. A treatment system for iron and manganese removal has been constructed at the site of the City's Farmers Lane wells to treat groundwater pumped from Farmers Lane Wells Nos. 1 and 2 before entering the City's distribution system.

7.1.2.2 Groundwater Level Trends

The DWR Bulletin 118 updated in February 2004 states that the Santa Rosa Plain Subbasin "as a whole is about in balance, with increased groundwater levels in the northeast contrasting with decreased groundwater levels in the south." The 2013 USGS study also found that groundwater levels in the Santa Rosa Plan Subbasin are relatively stable over time, and in the shallow aquifer range from close to ground surface near the Laguna de Santa Rosa to about 15 to 30 feet below ground surface along the eastern basin boundary and 50 feet near the southern end of the Santa Rosa Plain Subbasin. Most recently, the 2022 GSP presents a similar analysis and also found long-term trends to be stable or increasing over time, with the exception of wells within the southern portion of the Subbasin in the Cotati area.

Groundwater levels in intermediate and deeper wells in the southern Santa Rosa Plain Subbasin exhibit seasonal fluctuations and have shown a decline in groundwater levels in the late 1970s and 1980s. The declines reached a maximum in the early 1990s, followed by recovery in the early 2000s. The recovered groundwater levels coincide with increased conservation, reduced groundwater pumping, and increased deliveries of Russian River supplies from Sonoma Water to the City of Rohnert Park. These historical declines are primarily associated with increases in municipal groundwater pumping related to population growth through the 1990s coupled with droughts in 1976-77 and 1987-92, and the recovered groundwater levels coincide with the aforementioned reduced pumping in this area since the early 2000s.

A review of groundwater levels in wells actively monitored by DWR generally supports these findings, in that a majority of the wells actively monitored by DWR located throughout the Subbasin have demonstrated either increasing or stable groundwater levels, indicating that the Subbasin is in balance and is not being overdrafted. An overdrafted groundwater basin would generally be characterized by groundwater levels that decline over a period of years and never fully recover, even in wet years. This is not the case for the Santa Rosa Plain Subbasin.[48]

[47] California Department of Water Resources, Bulletin 118 California's Groundwater, Individual Groundwater Basin Description for Santa Rosa Valley, Santa Rosa Plain Subbasin, last update February 27, 2004.
[48] City of Santa Rosa, 2035: General Plan Water Supply Assessment, Section 2.4.4.1.3.

Groundwater level data for the City's municipal wells were compared to historical data. For the City's Carley Well, Peters Spring Well, and Farmers Lane Wells Nos. 1, 2 and 3, historical groundwater levels from the 1940's and 1950's were compared to current groundwater levels. Although the available data is limited, the data indicate for each of these wells that static (non-pumping) groundwater levels have increased significantly from 14 to 94 feet below groundwater surface in the 1940's and 1950's to essentially artesian conditions (e.g., groundwater level at or above ground surface). The City's Farmers Lane Wells Nos. 1 and 2 and Leete Well demonstrate artesian conditions, while water surface elevations in the City's other wells are only a few feet below ground surface, indicating an abundance of groundwater in the portion of the subbasin underlying the City.

A review of hydrographs near the City's Farmers Lane wells shows that groundwater elevations have been high (within 10 to 30 feet of the ground surface) and stable since at least 1989, indicating that groundwater recharge is taking place and that additional groundwater yield from this area is possible.[49] Groundwater level data collected from the Farmers Lane Wells after recent summer pumpage periods shows that water levels quickly recover to artesian conditions after the wells are turned off. The hydrographs indicate that groundwater elevations to the east of the Farmers Lane wells are significantly higher than the ground surface at the Farmers Lane wells, which provides additional explanation for the artesian conditions at the Farmers Lane wells.[50]

7.1.2.3 Groundwater Storage and Budget

Over the years, several estimates have been made of the groundwater storage capacity of the Santa Rosa Plain Subbasin. These estimates of storage capacity range from 948,000 AF to 4,313,000 AF.

Based on work by DWR, a brief description of each storage capacity estimate follows:[51]

- Using the water level information for the spring of 1980 and the product of the TRANSCAP computer program, the volume of groundwater in storage was estimated to be 3,910,000 AF by DWR in Bulletin 118.
- USGS estimated the gross groundwater storage capacity for this basin to be about 948,000 AF based on the average specific yield of 7.8 percent for aquifer materials at depths of 10 to 200 feet.
- DWR performed a study of the area in 1982 and calculated the groundwater storage capacity for this basin to be 4,313,000 AF. This calculation was made using the TRANSCAP computer program, assuming aquifer thicknesses ranged from 50 to over 1,000 feet with an average thickness of approximately 400 feet.

According to the DWR Bulletin 118, a groundwater model for the Santa Rosa Plain Subbasin was prepared by DWR in 1982. The 15-year period from 1960-61 through 1974-75 was selected as the study period for the Santa Rosa Plain Subbasin because it contained a mixture of wet and dry years approximating long-term climatic conditions. The average annual natural recharge for the period 1960 to 1975 was estimated to be about 29,300 AF. Average annual pumping during the same time period was estimated to be

[49] West Yost and Associates, Technical Memorandum, Evaluation of Potential Impacts Associated with Increased Groundwater Production from Farmers Lane Wells W4 1 and W4 2, July 22, 2004.
[50] City of Santa Rosa, SB 610 Water Supply Assessment for the Downtown Station Area Specific Plan Update, March 3, 2020.
[51] California Department of Water Resources, February 27, 2004.

approximately 29,700 AF, indicating that the annual natural recharge and the annual pumping within the Subbasin were essentially in balance.

The 2013 USGS study estimated changes in groundwater storage for the Santa Rosa Plain Watershed, which includes the Santa Rosa Plain Subbasin, using the GSFLOW model. USGS evaluated long term changes in storage for the period 1976 through 2010 as decreasing by 3,300 AFY. This change in storage is very small in comparison to the overall groundwater storage in the Santa Rosa Plain Watershed. The very small change in storage is consistent with generally stable groundwater levels in the Subbasin, which indicate that groundwater storage in the Subbasin is in balance.

The GSP builds upon these previous methods and provides the most recent estimate of Subbasin change in groundwater storage. The GSP groundwater budget finds that storage declined during the historical budget period (1976-2018) by 600 AFY and by 2,100 AFY in the current (2012-2018) budget period. Therefore, the current period (which includes a drought) has larger declines in groundwater storage than the historical period. Analysis of groundwater pumping during the recent period shows the increased rate of groundwater-storage depletion appears to be more a result of a drier climate than increased pumping during that period.

With respect to the area in the vicinity of the City's Farmers Lane wells, it has been estimated that the annual groundwater recharge to the area from which the Farmers Lane wells extract groundwater is on the order of 2,500 AFY, using historical rainfall data and an estimate of the potential recharge area.[52]

7.1.3 Recycled Water Supply Constraints

The Santa Rosa Regional Water Reuse System (Regional System) produces about 18 million gallons per day of recycled water for reuse (approximately 20,000 acre-feet per year). This recycled water meets State standards for non-potable uses and is suitable for irrigation, industrial, and agricultural purposes (but not for drinking). The system is monitored by state, local, and federal agencies to ensure compliance with applicable regulations. Santa Rosa has been safely using recycled water for over 40 years.

Over half of the Regional System's recycled water (more than 12,000 AFY) is sent to The Geysers where it is used for geothermal power generation. Calpine Corporation (a power generation company) receives recycled water and pumps it deep underground into steam fields to generate enough clean renewable electricity for up to 100,000 households. The remaining portion is used for agricultural on about 6,400 acres outside of the City's urban system and for non-potable uses in the City of Rohnert Park, and a small amount is conveyed to Santa Rosa's urban recycled water system.

On average, 140 AFY (less than one percent of the total Regional System production) is conveyed to the City's urban recycled water system where it is distributed to customers for landscape irrigation at residential, commercial, and institutional sites within the City's urban water system boundaries. Urban recycled water customers are given top priority for recycled water (non-interruptible supply). The urban recycled water supply has not been impacted by dry weather conditions since the inception of the urban recycled water use program in 2009.

[52] Technical Memorandum, Evaluation of Potential Impacts Associated with Increased Groundwater Production from Farmers Lane Wells W4 1 and W4 2, prepared by West Yost & Associates, July 22, 2004.

7.2 Year Type Characterization

This section discusses the City's potable and non-potable water supplies available during normal conditions, single-dry year conditions, and dry five-year periods.

To identify the years to use for characterizing a normal year, a single-dry year, and the five consecutive year drought conditions, the City used the following water year definitions from the DWR Guidebook.[53]

- Normal Year. This condition represents the water supplies a Supplier considers available during normal conditions. This could be a single year or averaged range of years that most closely represents the average water supply available to the Supplier. In the DWR Guidebook, DWR uses the terms average and normal interchangeably when addressing the water year type.
- Single-Dry Year. The single-dry year is the year that represents the lowest water supply available to the Supplier.
- Five Consecutive Year Drought. Per Water Code, the five consecutive dry year period for the Drought Risk Assessment for 2026-2030 would be the driest five-year historical sequence for the Supplier (Water Code Section 10612). The State encourages Suppliers to use the same five-year sequence for their water service reliability assessment. However, Suppliers may choose to use a different five consecutive year dry period such as the lowest average water supply available to the Supplier for five years in a row. Suppliers are encouraged to characterize the five consecutive year drought in a manner that is best suited for understanding and managing their water service reliability.

The City has two sources of potable water supply: Sonoma Water contract water and City groundwater wells. For these water sources, the City has identified base water years for the historical average ("normal") year, single-dry year, and the driest five-year period on record. Base water years were selected based on aggregated historical information for all water supply sources and analysis by Sonoma Water.

The City has one source of non-potable water (recycled water). The City has been producing and using recycled water since the 1970s for agricultural use. Urban use of recycled water (for landscape irrigation) began in 2009. The City will use the same base water years for the historical average ("normal") year, single-dry year, and five consecutive dry year period.

Base years and the total water supply (potable and non-potable) that was available during each water year type are summarized in **Table 7-1**. Although the City did not begin delivering recycled water to urban customers until 2009, this water supply is available into the future and is included in the three scenarios illustrated in the table below (average year, single-dry year, and five consecutive dry years).

[53] State of California Department of Water Resources. Final January 2026. Urban Water Management Plan Guidebook 2025.

TABLE 7-1: BASIS OF WATER YEAR DATA (RELIABILITY ASSESSMENT) (DWR 7-1 RETAIL)

Year Type	Base Year	Available Supplies if Year Type Repeats	
		☐	Check the box if quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. **Location:** [insert location from UWMP]
		Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available (AF)	**% of Average Supply**
Average Year	1999	31,540	100%
Single-Dry Year	1977	22,053	
Consecutive Dry Years 1st Year	1987	22,053	
Consecutive Dry Years 2nd Year	1988	22,053	
Consecutive Dry Years 3rd Year	1989	22,053	
Consecutive Dry Years 4th Year	1990	22,053	
Consecutive Dry Years 5th Year	1991	22,053	

Notes: All supplies reported in this table are based on 2030 projected conditions. Additional supplies are estimated to be available in all year types based on new projects coming online in future years, and due to changing demands. Average year supplies are based on 29,100 AFY contract water entitlement plus 2,300 AFY of groundwater and 140 AFY of recycled water. The remaining dry years are based on the same assumptions for groundwater and recycled water, plus an assumption of contract water supply availability equaling 2030 total potable demands.

7.2.1 Water Service Reliability

This section provides an analysis of the reliability of the City's water service to its customers over the planning horizon through 2050. This assessment compares projected water demands to total water supply sources for a normal water year, a single-dry water year, and a dry period lasting five consecutive years. The water supply service reliability analysis extends through 2050 in five-year increments and is based on the information provided in **Chapters 4 and 6**.

In summary, the water service reliability assessment through 2050 found the following:

- Normal Water Years: The City projects having adequate water supplies in normal years to meet demands through 2050.
- Single-Dry Water Years: The City does not project a shortfall in contract water supply from Sonoma Water in a single-dry year that is hydrologically equivalent to the driest water year on record (1977). Also, the City does not anticipate a shortfall in groundwater supply or recycled water supply.

- Dry Five-Year Periods: The City projects having adequate water supplies for dry five-year periods that are hydrologically equivalent to the five driest consecutive years on record (1987-1991) to meet demands through 2050.

7.2.2 Water Service Reliability – Normal Year

Contract Water: As described in Sonoma Water's 2025 UWMP and summarized in **Chapter 6** of this UWMP, Sonoma Water's model projects being able to provide up to 29,100 AFY per the Restructured Agreement during normal water years through 2050, starting in 2035.

Groundwater: As discussed in **Chapter 6**, the City projects being able to produce up to 4,100 AFY of groundwater from its potable wells during normal water years through 2050, starting in 2035.

Recycled Water: As discussed in **Chapter 6**, the City projects being able to provide up to 140 AFY of non-potable water (recycled water) to urban recycled water customers through 2050.

Demands: As discussed in **Chapter 4**, the City has projected normal water demand through 2050 in five-year increments. These projections are for normal demands, which reflect anticipated water use when the City is not experiencing a water shortage. The projected demands take into account estimated population and employment growth, likely new development, passive water savings from plumbing codes, and climate change.

Assessment: A comparison of future water supplies and projected demands shows that demands will not exceed supplies in normal water supply years through 2050, which is the planning horizon of this UWMP.

Table 7-2 provides a comparison of projected total water supply and demand during normal years. As shown, the City anticipates having adequate water supplies to meet demands through 2050.

TABLE 7-2: NORMAL YEAR SUPPLY AND DEMAND COMPARISON (DWR 7-2 RETAIL)

	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals (autofill from Submittal Table 6-9 R)	31,540	32,340	33,340	33,340	33,340
Use totals (autofill from Submittal Table 4-2 R)	19,753	20,061	20,453	20,905	21,403
Surplus/(shortfall)	11,787	12,279	12,887	12,435	11,937

7.2.3 Water Service Reliability – Single-Dry Year

Contract Water: As described in Sonoma Water's 2025 UWMP, Sonoma Water's model does not project a supply shortfall of potable water supply during single-dry years. For the purpose of single-dry year supply projections for the City's 2025 UWMP, Contract Water volume is assumed equal to total projected demands.

Groundwater: As discussed in **Chapter 6**, the City projects that groundwater supply would not be reduced during a single-dry year due to the short duration of a single-dry year and the historically artesian conditions of the City's Farmers Lane wells. The City projects having 2,300 AFY of potable groundwater during single-dry years through 2030, and up to 4,100 AFY through 2045.

Recycled Water: As discussed in **Chapter 6**, the City projects non-potable (recycled) water supply would not be reduced during single-dry years. The projected demand for recycled water within the City is less than one percent of the total annual recycled water production volume, and urban recycled water customers are given top priority for deliveries. The City projects having 140 AFY of recycled water during single-dry years through 2050.

Demands: As discussed in **Chapter 4**, the City projected normal water demand through 2050 in five-year increments. These projections reflect anticipated water use when the City is not experiencing a water shortage. The normal demand projections consider estimated population and employment growth, likely new development, and passive water savings from plumbing codes.

Assessment: A comparison of future water supplies and projected demands shows that demands will not exceed supplies through 2050, within the planning horizon of this UWMP.

Table 7-3 provides a comparison of projected total water supply and demand during single dry years. As shown, the City anticipates having adequate water supplies to meet demands through 2050.

TABLE 7-3: SINGLE-DRY YEAR SUPPLY AND DEMAND COMPARISON (DWR TABLE 7-3 RETAIL)

	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals	22,053	23,161	24,553	25,005	25,503
Use totals	19,753	20,061	20,453	20,905	21,403
Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100

7.2.4 Water Service Reliability – Five Consecutive Dry Years

Contract Water: As described in Sonoma Water's 2025 UWMP, Sonoma Water's model does not project a supply shortfall of potable water supply during multiple dry years. For the purpose of multiple dry years supply projections for the City's 2025 UWMP, Contract Water volume is assumed equal to total projected demands.

Groundwater: As discussed in **Chapter 6**, the City projects that groundwater supply would not be reduced during dry five-year periods. The City reviewed the volumes of groundwater extracted over the past 10 years (2015-2025), including during the recent historic drought (2020-2022). Due to the quantity of groundwater storage available and the City's observation that its wells have historically quickly returned to artesian conditions each year (even during drought conditions), the City anticipates that groundwater supply will

not be reduced by dry five-year periods. The City projects increasing groundwater supply availability with the development of new supplies, as discussed in **Chapter 3 and 6**.

Recycled Water: As discussed in **Chapter 6** of this UWMP, the City projects non-potable (recycled) water supply would not be reduced during dry five-year periods. The City reviewed the volumes supplied to urban recycled water customers over the past 10 years (2015-2025), including during the recent historic drought (2020-2022). The City considered the fact that urban recycled water customers consume less than one percent of the total recycled water produced and that urban recycled water customers are given high priority for deliveries. The City projects having 140 AFY of recycled water during five dry year periods through 2050.

Demands: As discussed in **Chapter 4**, the City has projected normal water demand through 2050 in five-year increments. These projections are for normal demands, which reflect anticipated water use when the City is not experiencing a water shortage. The projected demands take into account estimated population and employment growth, likely new development, and passive water savings from plumbing codes.

Assessment: A comparison of future water supplies and projected demands shows that demands will not exceed supplies in dry five-year periods through 2050, which is the planning horizon of this UWMP.

Table 7-4 provides a comparison of projected total water supply and demand during dry five-year periods. As shown, the City anticipates having adequate water supplies to meet demands through 2050.

TABLE 7-4: MULTIPLE DRY YEARS SUPPLY AND DEMAND COMPARISON (DWR TABLE 7-4 RETAIL)

		2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
First year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
Second year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
Third year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
Fourth year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
Fifth year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100

7.2.5 Water Service Reliability – Management Tools and Options

All water consumed by the City comes from local supply sources. No water is imported from other regions, nor does the City anticipate importing water from other regions during the UWMP planning period. Therefore, the City's water management tools focus on increasing the reliability of water supplies over time. For example, by providing funding and staffing to implement the City's robust water use efficiency programs for over three decades, the City worked with the community to ensure water is used wisely by customers during all water supply conditions. Details about demand management efforts are discussed in **Chapter 9**. State regulations and local ordinances have also helped to reduce water use over the past 30 years. Going forward, the City will continue to provide its "WaterSmart" programs to engage customers in helping to manage local water supplies effectively. For any future water shortage scenarios that require additional action during a severe dry period or a catastrophic supply interruption, the City will implement its WSCP summarized in **Chapter 8** and detailed in **Appendix F**.

It is also important to note that Sonoma Water can store 245,000 AF of water in Lake Sonoma and can divert up to 75,000 AFY for water supply purposes under current water rights permits. This means that Lake Sonoma can store approximately three years of normal water supply. While supply volumes in **Table 7-3** are shown to exactly meet demands in single-dry years when shortages might occur, it is anticipated that additional water would remain in storage in Lake Sonoma to meet future demands. In addition, the City's groundwater wells would only be pumped as needed to meet water use, even though the groundwater supply could produce more water.

7.3 Drought Risk Assessment

The Drought Risk Assessment (DRA) is an evaluation of local water supply availability, assuming the next five years (2026-2030) are hydrologically equivalent to the driest five consecutive years on record. As required by the regulation, this section provides a description of the data and methods used for the DRA, the basis for determining supply shortage conditions, a determination of the reliability of each water supply source, and a comparison of the total water supplies and uses, assuming the next five years are hydrologically equivalent to the driest five consecutive years on record.

7.3.1 Data, Methods, and Basis for Water Shortage Condition

The City analyzed data and considered trends to assess whether supply shortage conditions are anticipated in one or more years during the upcoming five-year period (2026-2030), assuming this upcoming five years are hydrologically equivalent to the driest five-year period on record. To conduct this assessment, the City relied on the following data sources to develop this DRA:

- Driest five-year period on record for the region, based on historical hydrological information (Source: Sonoma Water 2025 UWMP)
- Historic and current water supplies by source (Sources: City records)
- Historic and current water use, including all uses and water losses (Source: City records and annual Water Loss Audits).
- Projected water supply availability for 2026 through 2030 (Source: Sonoma Water 2025 UWMP, City records for groundwater and recycled water)
- Projected water use for 2026-2030 (Sources: EKI report (**Appendix D**) and **Chapter 4** of this UWMP)

The City used the following methods in its analysis:

Driest Five-Year Period: To identify the driest five-year period on record, the City relied on the analysis completed by Sonoma Water. Sonoma Water analyzed hydrologic records for the region and determined that the driest five-year period on record as 1987-1991.

Water Use: To estimate water use for 2026-2030, the City used historic and projected water use data. Water use was estimated at "unconstrained" levels. Unconstrained refers to anticipated water use under normal water year conditions when the City is not experiencing a water shortage. To estimate unconstrained demand for 2026-2030, the City considered historic water use and the projected demand for 2026, which takes into account estimated population and employment growth, likely new development, rebounding demand after the 2020-2022 drought, passive water savings from plumbing codes, and climate change impacts.[54] The anticipated increase in use from 2024 actual use to 2025 projected demand was applied to estimate the demands for 2026, 2027, 2028, and 2029.

Table 7-5 (which includes estimated demands for potable and non-potable water from **Table 4-11** and **Table 4-12** from **Chapter 4**) shows the estimated unconstrained water demand for 2026-2030.

TABLE 7-5: ESTIMATED WATER USE FOR 2026-2030, AF

	2026 Estimated	2027 Estimate)	2028 Estimated	2029 Estimated	2030 Projected
Potable[(a)]	17,660	18,148	18,637	19,125	19,613
Non-potable (recycled)[(b)]	140	140	140	140	140
Total	**17,800**	**18,288**	**18,777**	**19,265**	**19,753**

(a) Estimated potable water demand for 2026-2030 was based on interpolating between actual 2025 use and projected 2030 demands from Table 5-4 in **Appendix D** (EKI report).

(b) Estimated non-potable (recycled water) demand is expected remain at or below 140 AFY.

Water Supplies: To estimate water supplies for 2026-2030, the City considered each water supply separately:

- **Contract Water**: The City relied on Sonoma Water for its analysis of contract water supplies. Sonoma Water assessed the availability of its water supply for 2026-2030 under hydrologic conditions equivalent to the driest five-year period on record (1987-1991). Based on that analysis, Sonoma Water anticipates contract water supply would be less than normal but would not result in a water shortage condition for the City if the 2026-2030 hydrology is equivalent to the driest five-year period on record. Sonoma Water determined it could provide supplies equal to unconstrained total City demands (less the volume of groundwater and recycled water supplies available) for each of the upcoming five years if a similar drought occurred.

- **Groundwater**: The City assessed groundwater availability for 2026-2030 under conditions equivalent to the driest five-year period on record. The City reviewed the volumes of groundwater extracted over the most recent 10 years (2016-2025), which include the recent historic drought (2020-2022). The City considered the fact that its production wells have historically quickly returned

[54] EKI report (**Appendix D**).

to artesian conditions quickly, even after full time use over six to seven dry months each year, including during drought conditions. Therefore, the City projects groundwater supply will not be impacted if 2026-2030 is hydrologically equivalent to the driest five-year period.

- **Recycled Water**: As discussed in **Chapter 6**, the City assessed recycled water availability for 2026-2030 under conditions equivalent to the driest five-year period on record. The City reviewed the volumes supplied to urban customers over the past 10 years (2016-2025), including the recent historic drought (2020-2022). The City considered the fact that urban customers consume less than one percent of the total recycled water produced, that urban recycled water customers are given high priority for deliveries and that urban recycled water supply has not been impacted by drought conditions. Therefore, the City projects recycled water supply will not be impacted if 2026-2030 is hydrologically equivalent to the driest five-year period.

7.3.2 DRA Water Source Reliability

As discussed above in **Section 7.2.1**, the City assessed available water supplies for 2026-2030, assuming the hydrology will be equivalent to the driest five-year period on record and determined the following:

- Sonoma Water anticipates contract water supply would be less than normal but would not result in a water shortage condition.
- Groundwater supply will not be impacted.
- Recycled water supply will not be impacted.

Table 7-6 (which is **Table 6-17** from **Chapter 6**) shows the estimated water supply by water source for 2026-2030, assuming the hydrology will be equivalent to the driest five-year period on record.

TABLE 7-6: 2026-2030 PROJECTED WATER SUPPLY, ASSUMING DRY CONDITIONS, AF

Supply	2026	2027	2028	2029	2030
Purchased Water (potable)	15,361	15,849	16,337	16,826	17,314
Groundwater (potable)	2,300	2,300	2,300	2,300	2,300
Non-potable (recycled)	140	140	140	140	140
Total	**17,801**	**18,289**	**18,777**	**19,266**	**19,754**

7.3.3 Total Water Supply and Use Comparison

This section provides an analysis of the reliability of the City's water service to its customers should the next five years (2026-2030) be hydrologically equivalent to the driest five-year period on record for the region (1987-1991). This assessment compares estimated water demands to total water supply sources.

The City anticipates having adequate supplies to meet estimated unconstrained demand if 2026-2030 is hydrologically equivalent to the driest five-year period on record. **Table 7-7** provides a comparison of estimated water supplies and unconstrained demands for 2026-2030 under drought conditions

TABLE 7-7: FIVE-YEAR DROUGHT RISK ASSESSMENT TABLES TO ADDRESS WATER CODE SECTION 10635(B) (DWR TABLE 7-5 RETAIL)

2026	Total
Total Water Use (AF)	17,800
Total Supplies (AF)	17,801
Surplus/Shortfall w/o WSCP Action	1
2027	**Total**
Total Water Use (AF)	18,288
Total Supplies (AF)	18,289
Surplus/Shortfall w/o WSCP Action	1
2028	**Total**
Total Water Use (AF)	18,777
Total Supplies (AF)	18,777
Surplus/Shortfall w/o WSCP Action	0
2029	**Total**
Total Water Use (AF)	19,265
Total Supplies (AF)	19,266
Surplus/Shortfall w/o WSCP Action	1
2030	**Total**
Total Water Use (AF)	19,753
Total Supplies (AF)	19,754
Surplus/Shortfall w/o WSCP Action	1

8. WATER SHORTAGE AND CONTINGENCY PLANNING

The City has developed a detailed standalone Water Shortage Contingency Plan (WSCP) for responding to water shortage conditions. The full plan has been attached in **Appendix F**. Here is a concise summary of the key requirements met by the attached WSCP:

- **Section 1: Introduction** provides an overview of the City's WSCP.
- **Section 2: Water Service Reliability Assessment** summarizes key elements of the water supply reliability analysis conducted for the City's 2025 UWMP. [CWC Section 10632(a)(1)]
- **Section 3: Procedures for Annual Water Supply and Demand Assessment** outlines the process that the City will use to conduct assessments each year to determine if shortage exist or are anticipated and provides written decision making steps for any subsequent actions. [CWC Section 10632 (a)(2)]
- **Section 4: Standard Water Shortage Stages** describes the City's eight water shortage levels and illustrates how these align with the State's six standard water shortage levels. [CWC Section 10632 (a)(3)(A)]
- **Section 5: Shortage Response Actions** describes the shortage response actions that the City will implement for each shortage level and estimates the extent these actions will address the gap between supplies and demands. [CWC Section 10632 (a)(4)]
- **Section 6: Communication Protocols** explains the procedures that the City will use to inform customers, the public, and government entities of any current or predicted water shortages and associated response actions. [CWC Section 10632 (a)(5)].
- **Section 7: Compliance and Enforcement** details the means that the City will use to ensure compliance and enforcement of triggered shortage response actions and describes appeal and exemption procedures. [CWC Section 10632 (a) (6)]
- **Section 8: Legal Authorities** describes the legal authorities that will empower implementation of the City's shortage response actions during water shortage emergencies. [CWC Section 10632 (a)(7) and Division 1, Section 350]
- **Section 9: Financial Consequences of Water Shortage Contingency Plan** provides a discussion of the potential revenue reductions and expense increases associated with activating shortage response actions and describes the City's mitigation actions. [CWC Section 10632 (a)(8)]
- **Section 10: Monitoring and Reporting** summarizes how the City will assure appropriate data is collected to monitor customer compliance and to respond to any state reporting requirements. [CWC Section 10632(a)(9)]
- **Section 11: Shortage Plan Refinement Procedures** describes steps the City will take to assess the functionality of the WSCP and make appropriate adjustments as may be warranted. [CWC Section 10632(a)(10)]

- **Section 12: Plan Adoption, Submittal, and Availability** outlines how the City will adopt, submit, implement, and amend (if necessary) the WSCP, and how the City will make it publicly available. [CWC Section 10632 (a)(c)]

9. DEMAND MANAGEMENT MEASURES

This chapter describes the City's historical and existing demand management measures (DMMs) to promote conservation and reduce water supply demands. It provides information about the status of implementation of DMMs, including a comprehensive description of the City's historical, current, and projected DMMs. These measures are integral not only to the City's long term water supply planning efforts but are also central to the effectiveness of the City's WSCP, which has been summarized in **Section 8** and provided in detail in **Appendix E**. Additionally, a comprehensive analysis of the effectiveness of the City's key water use efficiency programs can be found in **Appendix D** (EKI report).

9.1 Water Conservation Program Overview

The City has been and continues to be a leader in implementing innovative water conservation programs. Water conservation and demand management are an integral part of the City's water supply strategy. Santa Rosa is committed to integrating water conservation into future supply and demand solutions for both the water system and the wastewater treatment/reuse system.

The City has been implementing water conservation programs since the 1976-1977 drought. In the early 1990s, the City expanded these efforts by hiring a full-time Water Conservation Coordinator. By 1998, the City had established its first rebate and incentive programs and had hired three full time staff dedicated to water conservation program implementation. Additionally, in 1998 the City became a signatory to the California Urban Water Conservation Council (CUWCC)[55] *Memorandum of Understanding Regarding Urban Water Conservation* (MOU) dated September 1997. The City continued to expand its demand management and conservation programs to address the requirements of the Best Management Practices identified by the CUWCC. As a result of these efforts, the City was recognized by the Public Officials for Water and Environmental Reform (P.O.W.E.R) 2007 Water Conservation Scorecard as one of only two water retailers in the State of California to successfully complete all 14 of the CUWCC's Best Management Practices outlined in the 1998 CUWCC MOU, without an exemption. Following the CUWCC's restructuring in 2018 to become the California Water Efficiency Partnership (CalWEP), a state chapter of the national organization, the Alliance for Water Efficiency (AWE), Best Management Practices are no longer required. However, the City still implements a suite of DMMs and conservation programs and intends to expand these per new state conservation regulations which became effective in January 2025.

Since the early 1990s, the City has spent approximately $30 million on its water conservation programs, including replacement of approximately 58,000 toilets with ultra low-flow and high efficiency toilets and conversion of over 4.3 million square feet of high water use turf grass to low water use landscaping. Additionally, the City implements innovative programs such as the rainwater harvesting rebate program, graywater reuse rebate program, and sustained reduction rebate programs.

To encourage water conservation, the City established a conservation-oriented water rate structure in 2007. This water rate structure is designed to derive the majority of water sales revenue from volumetric, as opposed to fixed, charges. On average, from 2021 to 2025 the City received approximately 72 percent of potable water sales revenue from volumetric charges and 28 percent from fixed charges. The City set a tiered water rate structure for Single Family Residential customers and a water budget-based tiered water

[55] CUWCC changed its name California Water Efficiency Partnership (CalWEP) in 2018.

rate structure for Dedicated Irrigation customers that targets outdoor water use. The Dedicated Irrigation rate structure is based on landscape measurements for each customer's site and real-time evapotranspiration data from the City's CIMIS stations.

For 30 years, the City has offered a suite of technical support, education, information, rebates, and incentives to Single Family Residential, Multi-Family Residential, CII, and Dedicated Irrigation customers. As a result of the City's programs and state and local requirements, the City's per capita demand for potable water has decreased 50 percent over the past 35 years, decreasing from 177 GPCD in 1990 to 88 GPCD in 2025. Total water use went down 24 percent, decreasing from 22,494 AF in 1990 down to 17,172 AF in 2025, despite an increase in population of 54 percent.

The cumulative annual water savings from 2010-2024 attributed to the City's water use efficiency efforts implemented during that time period is estimated to be 12,300 AF. This does not include passive water savings due to plumbing code (see **Section 4.5**). These savings were estimated using a combination of national water use averages by device and appliance type based on the best available research, combined with some locally-specific estimated program water savings. Santa Rosa participated in a 2025 study on the water savings of the City's Green Exchange program (as a follow-up to a previous 2020 iteration of the study) and the indoor and outdoor water use efficiency survey program. This research (see **Appendix D** for the full report) provided Santa Rosa with the actual water savings for those programs from program participants and is a more accurate way of calculating water savings for these programs as compared to using national averages.

9.2 Demand Management Measures

The City implements a wide range of DMMs to promote conservation and reduce water supply demands. The various categories of DMMs are described in the subsections below, including implementation of the City's water waste ordinance, metering of all water connections, conservation pricing, public outreach and education, programs to assess and control distribution system water loss, water conservation program coordination and staffing, and a suite of free services, rebates, and incentives.

At the end of each program description, the narrative provides a description of the nature (e.g., type of rebate and amount) and extent (e.g., number of customers who participated) of the DMMs implemented by the City from 2021 through 2025. Over the course of this five-year period, staff conducted more than 1,790 indoor and/or outdoor water use surveys for residential and CII customers, and the City provided more than $1.1 million in rebates to over 1,129 residential and CII customers

9.2.1 Water Waste Prevention Ordinance

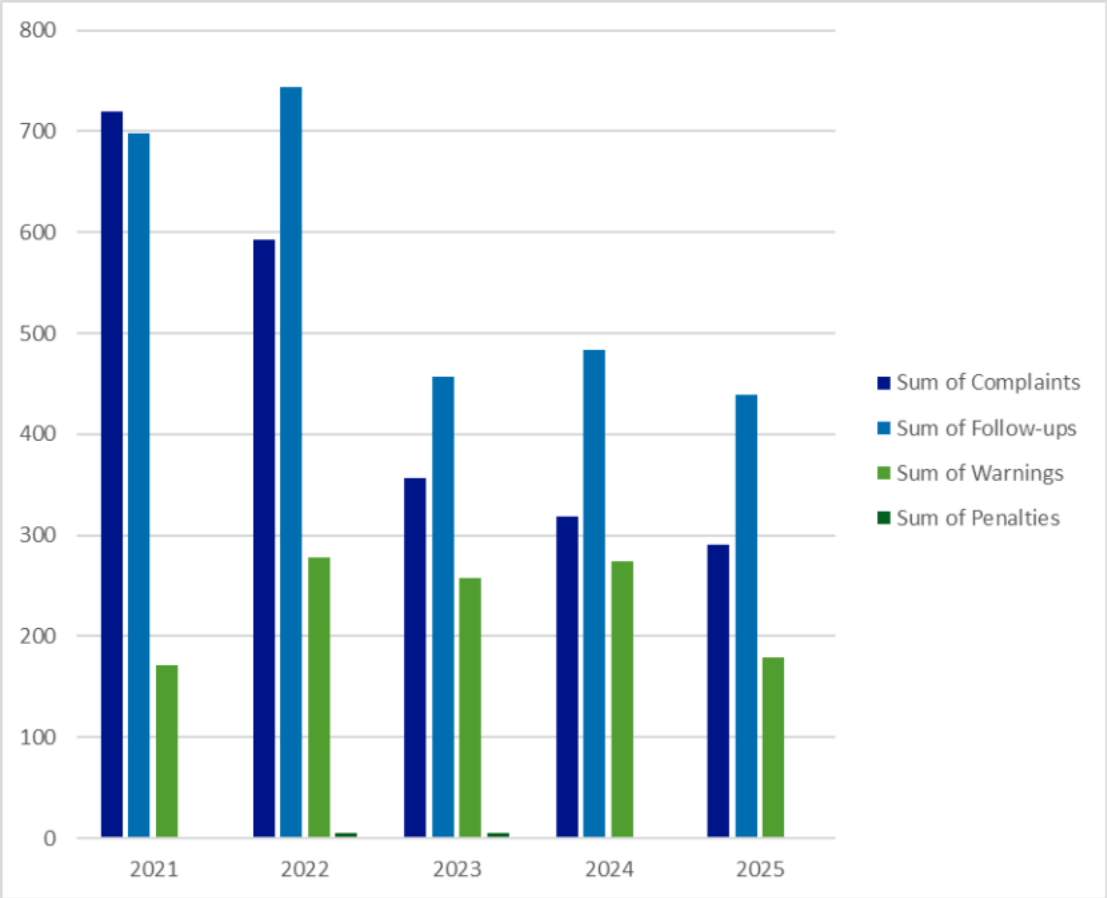
The City adopted Water Waste Ordinance No. 3426 (Ordinance) in May 1999. The Ordinance prohibits waste of water due to breaks or leaks in the water delivery system or water use in the outdoor areas resulting in runoff.[56] The Ordinance gives the City the authority to discontinue service, or fine the customer if the water waste is not corrected.

[56] The City's Water Waste Ordinance also requires all new water services to be equipped with recycling or reuse systems for evaporative cooling systems, decorative water fountains, conveyer car washes, and industrial clothes washers

The City has developed a process to address violations of the Ordinance. All reported water waste violations receive prompt response from City staff. If water waste is verified by staff, the customer is informed of the water waste ordinance requirements and corrective action timeline, offered free technical assistance, and provided information on water use efficiency (WUE) incentive programs. If corrective action is not implemented within the identified time frame, a formal notice of violation is mailed to the customer specifying actions that must be taken within a particular time frame. Failure to comply can lead to the City discontinuing water service, and/or fining the customer. As needed, the City also implements a water waste patrol to identify and notify customers of violations of the Ordinance.

Implementation Over the Last 5 Years: **Figure 9-1** shows the number of water waste reports for 2021 through 2025. Since 2021, 2,280 reports have been received by the WUE Program, resulting in over 2,821 follow-ups and 1,161 written warnings and further contacts. During this time, 14 water shutoffs were required. In 2020, the City began utilizing AMI data to identify sites with continuous water use. Through a review of usage data, staff identify connections that have continuous use and flag them for follow up. WUE Program staff then reach out to these customers and inform them of their continuous use data (and that it might be indicative of a leak); this has led to a marked increase in the number of water waste cases investigated and resolved beginning in 2020 and continuing to the present.

FIGURE 9-1: WATER WASTE CASES 2021-2025



9.2.2 Metering

The City's service area is fully metered. All existing water connections are metered, and all new connections are required to be metered. The City obtains meter reads electronically or manually as needed, and issues water bills to customers monthly. The City maintains an asset management database that contains detailed information on all meters in the City's system, including meter size, type, year installed, customer class served, and maintenance performed.

Implementation Over the Last 5-10 Years: In 2016, the City began converting meters to AMI technology. The City completed the full AMI conversion in 2021. AMI meters allow the City to remotely read meters, which speeds meter reading, decreases field safety concerns, and enhances customer service. An online customer data portal deemed the WaterSmart Portal was launched in 2021 to further enhance the City's customer service by providing customers with access to their own water use data in near-real time. In August 2024, the City began issuing automated leak detection notifications via the WaterSmart Portal for accounts with suspected leaks exceeding a designated threshold over 24 hours, with a supplemental notice sent to the email address associated with the account. In addition, staff access to AMI hourly data greatly assists water use efficiency efforts by providing a detailed profile of water use to help staff inform and educate customers about their current water use, seasonal patterns, and any continuous use.

9.2.3 Conservation Pricing

The City established a conservation-oriented water rate structure in 2007 to encourage water conservation implementation. The City implements an increasing block, tiered water rate structure for Single Family Residential customers and an increasing block, water budget based tiered water rate structure for Dedicated Irrigation connections (for urban landscape irrigation). The Dedicated Irrigation water rate structure is based on individual landscape measurements and real time evapotranspiration data from the City's CIMIS stations. The City's sewer charges are based on metered water use during winter months, when all water use is presumed to be indoor use.

The water rate structure is designed to derive the majority of water sales revenue from volumetric charges. Customers are billed on metered water use monthly. Because water rates are tiered and sewer fees are based on metered water use during winter months, customers can reduce their water and sewer bills by reducing their water use.

Implementation Over the Last 5 Years: The conservation-oriented rate structure has been in place since 2007. The City's current rate structure is available at www.srcity.org/817/Rates-Fees.

9.2.4 Public Education and Outreach

The City maintains four water use efficiency information distribution centers in City facilities, provides water use efficiency bill inserts in both English and Spanish, sends a WUE Program Welcome postcard to all new accounts informing them of the City's WUE Programs, participates in the annual Fix-A-Leak Week, and engages the public with information tables at community events to promote using water wisely. The City also provides information through its website, provides speakers to organizations, hosts several technical workshops for customers annually, and supports the statewide Water Awareness Month campaign each May with a variety of activities. In addition, the City has an active social media presence on Facebook, X (formerly Twitter), and NextDoor where water use efficiency outreach is posted in English and Spanish.

Additionally, digital and print ads, water bill inserts, the Santa Rosa's City Connections e-newsletter and radio ads are used to reach customers.

In 2010, the Sonoma Marin Saving Water Partnership (SMSWP) was established to work collaboratively on water conservation and efficiency implementation, including water conservation outreach and education. SMSWP consists of the cities of Santa Rosa, Rohnert Park, Sonoma, Cotati, Petaluma, Healdsburg, Cloverdale and the Town of Windsor, as well as California American Water, North Marin Water District, Marin Municipal Water District, Valley of the Moon Water District, and Sonoma Water. SMSWP provides regional media campaigns related to water conservation and water use efficiency, including digital and print newspaper ads and radio ads, Facebook posts, before the movie ads, a dedicated website, and local cable channel videos. For eight consecutive years (2017-2024), the SMSWP won the WaterSense Sustained Excellence Award from the United States Environmental Protection Agency (EPA) for developing and growing the Qualified Water Efficient Landscaper (QWEL) program. (Awards were not presented in 2025 due to a federal government shutdown. QWEL is a 21-hour nationwide training program that teaches landscape professionals about outdoor water use efficiency and offers certification in sustainable landscape practices.

The City's water wholesaler, Sonoma Water, implements a regional water education program on behalf of its retail water agencies. Sonoma Water's Water and Energy Education Program is designed to help educators teach students the "value" of water as an important natural resource, watershed stewardship, and how water and energy are linked. The program includes classroom instructional presentations; field study opportunities; Project WET (Water Education for Teachers) teacher trainings and workshops; free curriculum materials aligned with the California Next Generation Science Standard; a lending library of videos, interactive models, and printed materials; and endorsement, participation, and financial sponsorship of events, assemblies, and workshops. During the COVID-19 public health emergency and resultant County of Sonoma Public Health Order restricting in-person education opportunities, Sonoma Water developed free distance learning materials, including videos, activity sheets, and learning games for teachers of kindergarten through twelfth grade. All programs and materials are free to teachers in the Sonoma Water service area, including the City of Santa Rosa.

To supplement the Sonoma Water education program, the City also provides classroom presentations to educate students about where our water comes from, water conservation, and water quality through the City's *Take it From the TAP!* Program. The City also offers tours of the Laguna Wastewater Treatment Plant, incorporating information on water conservation and recycled water production and use.

Implementation Over the Last 5 Years: About six times each year from 2021 through 2025, the City distributed bill inserts to inform approximately 54,000 customers about water use efficiency rebates, incentives, free services and fixtures, classes, and events. On average, the WUE Team offered five workshops per year on subjects such as water efficient landscapes, graywater reuse, and rainwater harvesting.

From January 2021 through June 2025, the City reached thousands of customers by staffing information booths at the City's annual WaterSmart Expo, Wednesday Night Markets, Eco-Friendly Garden Tour, County Fair, local Home Show, the City's St. Patrick's Day 5K Run, Earth Day Festival, Cinco de Mayo Celebration, Día de los Niños, and Cesar Chavez Day. Additionally, the City provided *Take it From the TAP!* water education presentations to students from January 2021 through June 2025, reaching approximately 12,055 students in 38 schools (grades K12).

9.2.5 Programs to Assess and Manage Distribution System Real Loss

The City uses the AWWA Standard Water Audit and Water Balance M36 Publication and companion free Water Audit Software to determine and analyze system water losses. Water losses include "real losses" and "apparent losses". Real loss is defined by the State as the physical loss of water from water distribution systems. Apparent loss is defined as revenue losses due to meter inaccuracies, billing errors or unauthorized consumption.

In 2015 and 2016, a multidisciplinary team of City staff participated in the State sponsored Water Loss Technical Assistance Program to receive training and guidance to enhance their skills for conducting valid water loss audits. The team then performed extensive interviews of City staff and evaluations of systems to better understand existing procedures for collecting, entering, and managing data and for operating, repairing, and maintaining the distribution system. The audit team has been refining and improving data collection and data grading processes every year. The most significant step the City took to increase data validity is upgrading water meters, registers, and meter transceiver units to AMI technology.

As set forth in California Assembly Bill 1668 and Senate Bills 606 and 555, the SWRCB has adopted rules requiring urban retail water suppliers to meet volumetric performance standards for water losses. The City's performance standard target is 17.1 gallons per service connection per day.[57] The City's average real loss for 2020-2024 is 13.4 gallons per service connection per day, which is well below the performance standard. Based on these results, the City is currently in compliance with the anticipated volumetric performance standard and expects to maintain compliance through 2027 and beyond.

The City implements multiple programs to monitor and reduce water loss. All water entering the City's distribution system from Sonoma Water and from City-operated supply wells is metered, as is all water delivered to customers, including construction water and water sold from the municipal yard. City field crew trucks are also equipped with portable meters to track usage during routine maintenance activities, ensuring accurate accounting of operational water use. To maintain system integrity, hydrants are exercised regularly to keep valves functioning properly and hydrant pressure measurements are conducted several times each year to monitor system performance.

In addition, the City's field crews conduct a comprehensive proactive leak detection and repair program. Field crews use a combination of acoustic listening devices and a leak detection correlator to systematically complete a survey of the City's distribution system to identify undetected leaks (walking routes and listening to accessible points of the system, i.e., curb stops, valves, hydrants, etc.). System leaks discovered by staff and reported by the public are repaired promptly. The City maintains a database that records the date, time, and location of the leak, as well as the repair information and estimated amount of water lost due to the leak. The City is currently finalizing implementation of a GIS-enabled asset management software system (CityWorks) to enhance data collection and analysis capacity, including data related to leak repair. As a preventative measure, the City implements a proactive service replacement program for plastic services and certain copper services where the City has identified areas of high potential leaks from services.

Implementation Over the Last 5 Years: Described in narrative above.

[57] State Water Resources Control Board, Individual System Water Loss Standards, August 7, 2025 (accessed online on 9-8-2025) www.waterboards.ca.gov

9.2.6 Water Conservation Program Coordination and Staffing Support

Since January 1991, the City has had a full time WUE Program Coordinator overseeing the implementation of the City's water conservation and efficiency programs. In addition to the Coordinator, the City's WUE Team currently includes five full time-equivalent positions for water conservation programs, including two WUE Representatives, two WUE Technicians, and three part-time WUE interns.

Implementation Over the Last 5 Years: From 2021 to 2025, the annual budget averaged $1.5 million for staff and DMM programs.

9.2.7 Other Demand Management Measures

9.2.7.1 Ordinances and Laws

In addition to the DMMs discussed above, the City has adopted ordinances to require efficient water use in new development:

- In 1991, the City adopted an efficient plumbing fixture ordinance, Ordinance No. 2889, mandating the installation of low-flow faucet aerators and showerheads and ultra low-flow toilets (ULFTs) at all new and existing properties within the City.
- In 1992, the City adopted a Water Efficient Landscape Policy in response to Assembly Bill 325 (1991), requiring the installation of water efficient landscaping for all new development construction, excluding Single Family Residential.
- In 2007, the City adopted its 2007 Water Efficient Landscape Policy and the Single Family Residential Landscape Policy.
- In 2009, the City adopted its Water Efficient Landscape Ordinance (WELO), in response to AB 1881, incorporating and superseding the City's previously adopted 2007 policies.
- In 2015 the City revised its 2009 WELO to comply with the State's new Model Water Efficient Landscape Ordinance.
- In 2010, the City adopted the CALGreen Building Code Requirements, requiring high efficiency plumbing fixtures for all new construction and renovations of residential and CII properties. The City has also adopted all subsequent CALGreen Building Code Requirements.

More recently, the California state legislature passed two new laws that direct urban retail water suppliers to achieve water use efficiency standards, employ a suite of BMPs, and prohibit certain potable water use. These laws are as follows:

9.2.7.1.1 Non-Functional Turf (irrigation ban)

In October of 2023, the California legislature passed Assembly Bill 1572 which prohibits using potable water to irrigate non-functional turf (NFT) on CII accounts, including Homeowners' Associations (HOAs). The law also requires public water agencies to update policies to reflect the terms of the regulation no later than January 1, 2027. In 2025, the City began the process of updating city code to address the irrigation ban and to include enforcement measures, with anticipated adoption in 2026. Concurrently, the City is partnering

with CalWEP and other stakeholders across the state to develop education and outreach materials for various water account types impacted by the rule.

9.2.7.1.2 Conservation Regulation

On January 1, 2025, the *Making Conservation a California Way of Life* regulation (Conservation Regulation) went into effect for all urban retail water suppliers in the state. In addition to meeting an annual Urban Water Use Objective based on service area conditions, the regulation requires the City to adopt a number of Performance Measures and conservation BMPs. Performance Measures affect CII accounts and require those with large areas of irrigated landscapes meeting or exceeding a half-acre in size to either install dedicated irrigation meters or employ in-lieu technologies coupled with BMPs no later than 2039. Further, the City is required to employ a specific number of programs and other BMPs for the top 2.5 percent and 20 percent of CII water users. It is the City's intent to utilize existing DMMs and develop new customer offerings, as needed, to comply with implementation deadlines.

9.2.7.2 Programs

The City's WUE Program team delivers a wide range of free services, rebates, and incentives to help customers use water wisely. These efforts are described in more detail in the bolded subsections below.

9.2.7.2.1 Indoor Water Use Efficiency Survey

In 2004, the City began providing free water use efficiency surveys to all residential customers. The water use surveys are conducted by WUE Program staff and include checking for interior and exterior property leaks, inspecting toilets, shower heads, and faucets for flow rate and efficiency, and distributing free high efficiency showerheads and faucet aerators as needed. The City also provides free water use surveys for CII customers; audits include a review of water uses, plumbing fixtures, processes, cooling water systems, and provides site specific recommendations for efficiency improvements.

Implementation Over the Last 5 Years: Staff completed indoor WaterSmart Checkups for 1,538 residences (1,492 Single-Family residences and 46 Multi-Family units) and 159 businesses from 2021 through 2025.

In-person Indoor WUE WaterSmart Checkup also provides recommendations for improving irrigation efficiency, which is detailed in the Landscape Water Use Checkup section below. Customers are provided with a report of findings, and water use efficiency recommendations at the end of the Checkup.

9.2.7.2.2 WaterSmart Home Kit program

In 2020, the City launched this program which provides a kit containing all the materials needed for customers to perform a do-it-yourself survey at their own house with follow-up by WUE Program staff. Originally, the kit enabled the City to continue to provide surveys during the COVID-19 health emergency, but the program has continued to be implemented through present.

Implementation Over the Last 5 Years: 1,700 kits were distributed from 2021-2025.

9.2.7.2.3 Landscape Water Use Efficiency Survey

In addition to the Indoor Water Use Efficiency Survey described above, staff conduct Landscape WUE Surveys as well. Staff develop site specific recommendations for improving the efficiency of landscape water

use by testing irrigation systems for efficiency and recommending irrigation system repairs and improvements. By participating in this program, customers can also pre-qualify to participate in other landscape incentive programs, such as the Green Exchange Program described below. For customers with Dedicated Irrigation accounts, technical staff will check irrigation systems for leaks and for efficiency, recommend irrigation system repairs and improvements, develop irrigation schedules based on landscape measurements and ET_o data, and analyze potential water and financial savings from implementing efficiency upgrades.

Implementation Over the Last 5 Years: Staff completed landscape water use efficiency surveys for approximately 633 residential customers and 131 dedicated landscape irrigation meter sites from 2021 through 2025. Many customers participate in both an indoor and landscape water use efficiency Checkup at the same appointment; therefore, the total number of indoor and landscape Checkups may be greater than the number of actual customer site visits.

9.2.7.2.4 Sustained Reduction Rebate

The City's Sustained Reduction Rebate program began in 1996, initially for CII customers exclusively and was later expanded to include residential customers. This incentive encourages innovative approaches to reducing water use, such as through the adoption of new technologies and/or process water system design, that might not be covered under other existing rebate programs offered by the City. The City offers $400 for every 1,000 gallons per month of sustained water savings.

Implementation Over the Last 5 Years: From 2021 through 2025, two residential, one Multi-Family Residential, and one CII sites achieved sustained reductions, collectively reducing their demand by more than 20,500 gallons per month.

9.2.7.2.5 High Efficiency Clothes Washer Rebate

The City offers a rebate to Single Family and Multi-Family Residential customers who replace clothes washers with more efficient models. The program began in 1998, initially through a regional program administered by Sonoma Water. The City began administering its own residential program in 2004. Since 2000, the City has also offered a rebate program for the replacement of commercial washing machines with the highest efficiency commercial washing machines available. The City offers a rebate of $50 for residential washing machines. Commercial washing machines are eligible for a rebate of $350.

Implementation Over the Last 5 Years: A total of 175 residential were replaced under this program from 2021 through 2025.

9.2.7.2.6 Recirculating Hot Water Pump Rebate

From September 2014 to September 2023, the City offered a rebate for recirculating hot water pumps for Single Family residences. With a push of a button, the device pumps cold water sitting in the hot water pipe back to the water heater through the cold water pipe. When the hot water pipe has been refilled with hot water, the pump stops operating, and the end user has access to hot water without having wasted any cold water. This rebate was discontinued in 2023.

Implementation Over the Last 5 Years: 34 Single-Family Residential customers have taken advantage of the rebate, which increased from $100 to $250 in 2022, for installing a recirculating hot water pump from 2021 through 2023 when the program was discontinued.

9.2.7.2.7 Rainwater Harvesting Rebate

In 2009, the City developed and implemented a Rainwater Harvesting Rebate program. Rainwater harvesting is the capture, storage and use of rainwater on site. Rainwater systems range from simple catchment devices, such as rain barrels, to more complex systems such as cisterns and storage tanks. The City provides a rebate for storage, limited to the amount of storage needed to meet the estimated peak month water use needs for the landscape.

Implementation Over the Last 5 Years: From 2021 through 2025, City customers have received rebates of $0.25 to $1.00 per gallon of storage for rainwater harvesting systems. Note, between 2022 to 2023, the rebate was increased from $0.50 to $1.00 per gallon of storage through a grant funded by DWR. Collectively, customers installed over 92,140 gallons of rainwater storage from 2021 to 2025.

9.2.7.2.8 Graywater Reuse Rebate

In 2010, the City developed a Graywater Reuse Rebate to encourage the installation of graywater systems in compliance with new building codes. Graywater is wastewater collected from showers, bathtubs, bathroom sinks, and clothes washing machines that is reused on site instead of going into the sewer system. Graywater does not include water from toilets, kitchen sinks, or dishwashers. The City provides a few options for the Graywater Reuse Rebate Program, including a $100 rebate for single-fixture graywater systems ($75 prior to February 1, 2021) or a sustained reduction rebate of $400 for every 1,000 gallons per month of sustained water saving (the sustained reduction option would typically be used for multi-fixture, engineered systems that require a permit).

Implementation Over the Last 5 Years: Ten customers participated in the Graywater Rebate program or received free graywater kits to create their own system at home from 2021 through 2025.

9.2.7.2.9 High Efficiency Urinal Rebate

In 2009, the City began offering a High-Efficiency Urinal Rebate Program to CII customers. The City provides a rebate of up to $450 per urinal with a qualifying high-efficiency urinal that uses one pint of water per flush or less.

Implementation Over the Last 5 Years: Ten urinals were rebated from 2021 through 2025.

9.2.7.2.10 Green Exchange Program

In 2007, the City began offering rebates and financial incentives for reducing landscape water use and improving landscape water use efficiency at residential and CII sites. The Green Exchange Program provides rebates for replacing high water use landscaping with low water use alternatives and for qualifying irrigation system upgrades. For Single Family residences, the City provides a rebate for replacing up to 1,000 square feet of high water use turf grass with low water use alternatives. This increases to up to 10,000 square feet at Multi-Family Residential and CII sites. The City also provides a rebate for qualifying irrigation equipment and hardware upgrades.

As of July 2020, the City pays $0.75 per square foot of high water use turf grass replaced with low water use alternatives (up to 1,000 square feet total for Single-Family residences and up to 10,000 square feet annually for Multi-Family and CII sites). In response to the severity of drought conditions, the incentive increased from its previous value of $0.50 per square foot to $1.00 per square foot in August 2014 and returned to $0.50 per square foot in June 2016. The rebate was increased to $0.75 per square foot in July 2020 to increase program participation. The City also provides a rebate for upgrading irrigation equipment (up to $100 for Single-Family residences and up to $1,000 for Multi-Family complexes and CII sites).

Implementation Over the Last 5 Years: From 2021 through 2025, a total of 593 customers (482 Single-Family residences and 111 Multi-Family complexes and CII sites) participated in this "Cash for Grass" program, collectively replacing more than 774,000 square feet of high water use turf grass with low water use alternatives. A total of 98 sites (76 residential and 22 Multi-Family and CII sites) received rebates for installing qualifying upgrades to their irrigation systems from 2021 through 2025.

9.2.7.2.11 Water Budgets

In 2007, the City implemented a water budget based tiered water rate structure for Dedicated Irrigation customers based on real time evapotranspiration data from the City's CIMIS station and square footage of irrigated plant type on the site. Customers receive information about their water budgets on their monthly water bill and are charged for water use based on how efficiently they water compared to their billing period water budget.

Implementation Over the Last 5 Years: The City has 1,747 Dedicated Irrigation customers, all of which are involved with this program.

9.2.7.2.12 Service Split Incentive

The City has required new CII developments to install Dedicated Irrigation services since the 1980s. Because of this, the City has a limited number of CII accounts with "mixed use meters" that serve both indoor and outdoor water use on one meter. Approximately 10 percent of the City's CII accounts have mixed use meters. To encourage the retrofitting of mixed use connections to Dedicated Irrigation connections, the City developed and now implements a Service Split Incentive Program. The Service Split Incentive Program provides financial incentives to offset the material and permitting cost of retrofitting mixed use services with a Dedicated Irrigation service and a domestic service.

Implementation Over the Last 5 Years: There has been no participation in the service split incentive, likely due to the small number of CII accounts with mixed-use meters.

9.2.7.2.13 Efficient Fixtures Direct Install Program (EFDI)

In 2023, the City was awarded $1.5 million dollars from DWR to install ultra-high efficiency toilets (0.8 gallons per flush) and where feasible, low-flow faucet aerators and showerheads at commercial and residential accounts at no cost to the customer. The EFDI program will run until June 2026. In addition, in 2024, the City, under a sub-awardee grant agreement, launched a second EFDI program for residential customers with funding from the U.S. Bureau of Reclamation. This second EFDI program provides an additional $1.8 million in funding (under 55/45 percent match/reimbursement terms), for installation of the same ultra-high efficiency toilet and low-flow fixtures as the DWR-funded EFDI program through September 2026.

Previously, between 2016 and 2017, through a $2.5 million grant from DWR, the City replaced over 6,400 toilets (1.6 gallons per flush or more) with ultrahigh efficiency toilets (0.8 gallons per flush) in Single Family residences and Multi-Family complexes.

Implementation Over the Last 5 Years: From 2023-2025, 3,400 accounts have participated in the original grant. Both programs collectively are estimated to contribute to the installation of over 4,000 ultra-high efficient toilets across the City's service area.

9.3 Implementation to Achieve Water Use Targets

In November 2009, SB X7-7 was signed into law as part of a comprehensive water legislation package. Known as the 2009 Water Conservation Act, this regulation set a goal of achieving a 20 percent statewide reduction in urban per capita water use by the year 2020. The State directed urban retail water suppliers to establish an interim per capita water use target to be met by 2015 and a final per capita water use target to be met by 2020.

In the City's 2015 UWMP, the City identified its 2015 interim target as 136 GPCD and its 2020 final target as 126 GPCD. These targets, and the data and methodology used to calculate them, were included in the City's 2015 UWMP and discussed in **Section 5** and Appendix G of the previous 2020 UWMP.

By implementing the DMMs as described in Section 9 of the previous 2015 and 2020 UWMPs and the DMMs described in this UWMP in **Section 9.2** and **Section 9.3** above, the City achieved the interim and final targets. The City's actual per capita use was 85 GPCD in 2015, 99 GPCD in 2020, and 88 GPCD in 2025. Chapter 5 of the previous 2020 UWMP includes a detailed analysis demonstrating the City's compliance with SB X7-7. **5**[OBJ] of this 2025 UWMP has a brief summary of this regulation.

9.4 Water Use Objective

The *Making Conservation a California Way of Life* regulation (Conservation Regulation) became effective January 1, 2025, and establishes a new framework for urban retail water suppliers (suppliers) to manage their water use. The Conservation Regulation requires that suppliers annually calculate and comply with an urban water use objective (Objective). The Objective is calculated using water efficiency standards and unique climatic and demographic factors that reflect the previous year's conditions. The Objective will become more conservative through 2040, as the efficiency standards are reduced for both indoor and outdoor water usage. In addition, the Conservation Regulations require that suppliers implement various CII performance measures and submit an annual report to demonstrate compliance and progress to the State Water Resources Control Board (State Board). During the second reporting period to the State Board, fiscal year 2024/2025, the City's water usage was 33 percent below the calculated Objective.

Over the next five years (2026-2031), the City will continue to implement the suite of the DMMs discussed in **Section 9.2** and **Section 9.3** and seek grant funding, as feasible, to enhance customer programs and services geared at water use efficiency. In addition, the City will continue to proactively engage customers whose AMI data indicates continuous use. These actions are intended to allow the City to remain well below the Objective over the next five years and beyond.

9.5 Member Of The California Water Efficiency Partnership (Formerly California Urban Water Conservation Council)

In 1991, DWR along with water utilities, environmental organizations, and other interested groups formulated an MOU regarding urban water conservation in California to implement BMPs and make a cooperative effort to reduce the consumption of California's water resources. At that time, the CUWCC administered this contract. The MOU was amended in 1999.

The City signed the MOU in 1998, pledging to implement cost effective BMPs and conservation programs. By becoming a signatory, the City committed itself to abide by the BMPs and report progress on quantifiable measures at least every two years. Additionally, the City has served on the CalWEP Board of Directors for many years.

After the State adoption of new water conservation regulations in 2018, the CUWCC restructured as an organization and changed its name to the California Water Efficiency Partnership (CalWEP). Although the original BMPs are no longer required by CalWEP, CalWEP continues to play an important role in statewide water use efficiency. CalWEP provides tools, resources, information, and networking opportunities to water providers to implement, evaluate, and track water use efficiency efforts. The organization also tracks and influences water use efficiency legislation. The City is an active member of CalWEP and its national parent organization, the Alliance for Water Efficiency.

10. PLAN ADOPTION AND SUBMITTAL IMPLEMENTATION

This chapter provides information regarding the notification, public hearing, adoption, and submittal of the City's 2025 UWMP. It also includes discussion on plan implementation and the process of amending the UWMP.

This UWMP will be the source document for any Senate Bill 610 Water Supply Assessments or Senate Bill 221 Water Supply Verifications required for any proposed projects between 2026 and 2030 that are subject to the CEQA and would demand an amount of water equivalent or greater than the amount of water required by a 500 dwelling unit project. This UWMP will also be the source document for water demand projections and water supply availability should there be an update by year 2030 to the City's 2020 Water Master Plan, which was last updated in February 2022. Lastly, this UWMP will provide guidance and direction on development of new local supplies and implementation of water conservation programs and recycled water expansion to meet the requirements of the WC Act.

10.1 Plan Completion Timeline

As indicated in **Section 2** of this plan, the City uses a calendar year for water supply and demand accounting. The 2025 UWMP cannot be completed before the end of the calendar year 2025 because current year information is required by Water Code.

10.2 Notice Of Public Hearing

In accordance with the UWMP Act, the City must provide an opportunity for the public to provide input on this 2025 UWMP. The City must consider all public input prior to its adoption. There are two audiences to be notified for the public hearing: cities and counties, and the public.

10.2.1 Notice to Cities and Counties

Per California Water Code Section 10621, notice regarding the plan preparation was sent to the County of Sonoma more than 60 days prior to the public hearing date as noted in **Table 10-1**. A similar 60-day notice was also sent to neighboring cities, Sonoma Water, and the Santa Rosa Regional Water Reuse System. All notices to the cities and county were sent on January 21, 2026.

The City coordinated the preparation of its UWMP internally, with Sonoma Water, the agencies participating in the Regional Alliance for SB X7-7 compliance and the Santa Rosa Plain Groundwater Sustainability Agency. The notices of preparation are included as **Appendix B**. Upon substantial completion of this 2025 UWMP, the City provided the same agencies, including internally within the City and Sonoma County, notice of public hearing (**Appendix B**).

Notifications to cities and counties, in accordance with the UWMP Act, are summarized in **Table 10-1**. In addition, the City notified and coordinated with Marin Municipal Water District, North Marin Water District, and Valley of the Moon Water District.

TABLE 10-1: NOTIFICATION TO CITIES AND COUNTIES (DWR TABLE 10-1)

City Name	60 Day Notice	Notice of Public Hearing
City of Cotati	Yes	Yes
City of Petaluma	Yes	Yes
City of Rohnert Park	Yes	Yes
City of Sebastopol	Yes	Yes
City of Sonoma	Yes	Yes
Town of Windsor	Yes	Yes
County Name	**60 Day Notice**	**Notice of Public Hearing**
Sonoma County	Yes	Yes

10.2.2 Notice to the Public

To encourage community and public input on the development of the 2025 UWMP, the City included information about the preparation of 2025 UWMP and how to participate through an insert in the utility bills in February 2026, held a public meeting of the City's Water Conservation Subcommittee of the Board of Public Utilities in February 2026, and held a study briefing on the 2025 UWMP at a Board of Public Utilities meeting in March 2026 and a meeting of the Santa Rosa City Council in June 2026. The City also developed a dedicated webpage providing updates and information related to development of the 2025 UWMP: www.srcity.org/UWMP.

Following completion of the Draft UWMP, a notification of public hearing was placed in the local newspaper (The Press Democrat) about the 2025 UWMP update process. An electronic version of the document was made available on the City's website, www.srcity.org/UWMP.

During the public review period, local cities and Sonoma County, as well as the general public, were encouraged to comment on the draft document. Noticing for the public hearing was conducted pursuant to Section 6066 of the Government Code. Public hearing notifications were published in The Press Democrat. Copies of the published Notice of Public Hearing are included in **Appendix B**. In addition, the City notified Marin Municipal Water District, North Marin Water District, and Valley of the Moon Water District

10.3 Public Hearing And Adoption

A public hearing to discuss the Draft UWMP (along with the Draft Shortage Plan) was held on June 2, 2026 (TO BE CONFIRMED), in conjunction with the City Council meeting.

The public hearings provided an opportunity for all City water users and the general public to become familiar with the UWMP, provide comments, and ask questions about its water supply in addition to the City's continuing plans for providing a reliable, safe, high quality water supply. Copies of the draft UWMP were made available for public inspection at the Santa Rosa City Manager's office and at the Santa Rosa Municipal Services Center South Building.

This 2025 UWMP and the 2025 Water Shortage Contingency Plan were adopted by the City Council on June 2, 2026 (TO BE CONFIRMED). A copy of the adopted resolution is provided in **Appendix A**.

10.4 Plan Submittal

The adopted 2025 UWMP and 2025 Shortage Plan will be submitted electronically to DWR using the WUE data submittal tool within 30 days of adoption, prior to July 1, 2026. A CD or hardcopy of the adopted 2025 UWMP and 2025 Shortage Plan will also be submitted to the California State Library.

No later than 30 days after adoption, a copy of the adopted 2025 UWMP, including the Water Shortage Contingency Plan, will be provided to the cities and counties to which the City provides water.

10.5 Public Availability

No later than 30 days after submittal to DWR, an electronic copy of this UWMP, including the adopted Water Shortage Contingency Plan, will be available to the public online on the City's website, www.srcity.org/UWMP.

10.6 Amending An Adopted UWMP Or Water Shortage Contingency Plan

The City may amend its 2025 UWMP and its 2025 Shortage Plan jointly or separately. If the City amends one or both documents, the City will follow the notification, public hearing, adoption, and submittal process described in **Sections 10.2 through 10.4** above. In addition to submitting amendments to DWR through the WUE data portal, copies of amendments or changes to the plans will be submitted to the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

APPENDIX A: ADOPTION RESOLUTION FOR 2025 URBAN WATER MANAGEMENT PLAN AND 2025 WATER SHORTAGE CONTINGENCY PLAN

RESOLUTION NO. RES-2021-089

RESOLUTION OF THE COUNCIL OF THE CITY OF SANTA ROSA ADOPTING THE 2020 URBAN WATER MANAGEMENT PLAN AND ADOPTING THE 2020 WATER SHORTAGE CONTINGENCY PLAN

WHEREAS, the California Urban Water Management Planning Act (Act) requires all urban water purveyors serving over 3,000 connections or over 3,000 acre-feet of water annually to prepare an Urban Water Management Plan (UWMP) every five years; and

WHEREAS, the City of Santa Rosa is an urban supplier of water to approximately 54,000 connections supplying approximately 19,000 acre-feet of potable water annually and is therefore required to comply with the Act; and

WHEREAS, the purpose of the Act is to ensure sound planning and efficient management of water resources in the urban sector and to prepare for water shortages; and

WHEREAS, the City's last UWMP was adopted in June 2016, and was subsequently submitted to the California Department of Water Resources; and

WHEREAS, in 2009, the Act was amended by Senate Bill X7-7, known as the Water Conservation Act (SB X7-7), setting a goal of achieving a 20 percent reduction in statewide urban per capita water use by the year 2020; and

WHEREAS, SB X7-7 requires each urban water retailer to determine their base gross gallons per capita per day (gpcd) interim 2015 and final 2020 community water use targets to achieve the minimum water use reduction requirement, and to report their actual 2015 and 2020 compliance year gross gpcd and include this information in the 2010 UWMP and subsequent UWMPs; and

WHEREAS, in April 2011 the City Council conducted a public hearing and adopted the City's interim 2015 and final 2020 community water use targets and included those targets in the 2010 UWMP; and

WHEREAS, the interim 2015 and final 2020 community water use targets were required to be reviewed and updated as part of the 2015 UWMP, and were included in the 2015 UWMP adopted by City Council in June 2016; and

WHEREAS, the 2020 UWMP is required to report on compliance with the final 2020 target; and

WHEREAS, the Act also requires all urban water purveyors serving over 3,000 connections or over 3,000 acre-feet of water annually to prepare a Water Shortage Contingency Plan (Shortage Plan); and

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WHEREAS, the City of Santa Rosa has the authority and responsibility to adopt water demand reduction measures within its service area; and

WHEREAS, the City of Santa Rosa adopted its first Shortage Plan in 1992 and last adopted an update in June 2016; and

WHEREAS, the 2020 Shortage Plan has been prepared as a stand-alone document to comply with new requirements, and it is included in Appendix J to the 2020 UWMP; and

WHEREAS, the City's 2020 UWMP and 2020 Shortage Plan have been prepared per the requirements of the Act; and

WHEREAS, the Water Conservation Subcommittee of the Board of Public Utilities met three times from January through April 2021 to review the data and updates to the City's 2020 UWMP and 2020 Shortage Plan and concurred with the recommended updates to the City's 2020 UWMP and 2020 Shortage Plan; and

WHEREAS, the Board of Public Utilities, at its meeting on May 20, 2021, reviewed the 2020 UWMP and 2020 Shortage Plan and, by resolution, recommended that the City Council adopt the City's 2020 Urban Water Management Plan and the 2020 Water Shortage Contingency Plan; and

WHEREAS, staff reviewed the City's 2020 UWMP, the 2020 Shortage Plan, the Sonoma County Water Agency's Draft 2020 Urban Water Management Plan and its draft Water Shortage Contingency Plan, and considered public comments, and recommends the following changes to the Water Shortage Plan: (1) add the acronym for gallons per capita per day to the List of Acronyms and Abbreviations, and (2) add a requirement to the Prohibitions and Restrictions set forth in Section 5.2.3.3 stating that, starting in Stage 2, the hotel and lodging industry must incorporate measures including laundering only upon request, add language to Table 5.3 in Section 5.3 regarding hotel and lodging actions in Stage 2, incorporate hotel and lodging demand reduction measures in Stage 2 in Table 5-4, and add appropriate language to Appendix B and Appendix C; and

WHEREAS, the 2020 UWMP and the 2020 Shortage Plan are required to be submitted to the California Department of Water Resources by July 1, 2021.

NOW, THEREFORE, BE IT RESOLVED that the Council of the City of Santa Rosa adopts the City's 2020 Urban Water Management Plan.

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DRAFT

BE IT FURTHER RESOLVED that the Council of the City of Santa Rosa adopts the City's 2020 Water Shortage Contingency Plan, with the recommended modifications in response to public comment.

IN COUNCIL DULY PASSED this 8th day of June, 2021.

AYES: (7) Mayor C. Rogers, Vice Mayor N. Rogers, Council Members Alvarez, Fleming, Sawyer, Schwedhelm, Tibbetts

NOES: (0)

ABSENT: (0)

ABSTAIN: (0)

ATTEST: Stephanie A. Williams
City Clerk

APPROVED: Chris Rogers (Jun 17, 2021 22:05 PDT)
Mayor

APPROVED AS TO FORM:
City Attorney

DRAFT

APPENDIX B: PUBLIC NOTICES FOR URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN

January 20, 2026

To: Interested Parties

Re: Notice of Preparation of City of Santa Rosa 2025 Urban Water Management Plan and 2025 Water Shortage Contingency Plan

The California Urban Water Management Planning Act requires each urban water purveyor serving more than 3,000 connections or 3,000 acre-feet annually to prepare and submit an Urban Water Management Plan (UWMP) every five years.

Per Water Code Section 10621(b), the City of Santa Rosa (City) is providing notice that it is preparing its 2025 UWMP. The City's 2025 UWMP will provide an update and analysis regarding the City's projected water demand, water supply, and water supply reliability for the next 25 years, through 2050.

The UWMP will include an updated Water Shortage Contingency Plan (WSCP) that describes how the City will respond to water shortage conditions in times of drought, supply reductions, or emergencies.

The UWMP and WSCP are due to the California Department of Water Resources by July 1, 2026.

If your agency would like to participate or provide input during the preparation of the City's 2025 UWMP or its 2025 WSCP, please contact me at (707) 543-3962 or cnordlie@srcity.org. You can find additional information on the City's UWMP and WSCP by visiting srcity.org/UWMP.

Sincerely,

Claire Nordlie
Senior Water Resources Planner

Email Distribution List:
- County of Sonoma, PRMD (Permit Sonoma)
- County of Sonoma, Local Agency Formation Commission
- Santa Rosa Plain Groundwater Sustainability Agency
- Sonoma County Water Agency
- City of Cotati
- City of Petaluma
- City of Rohnert Park
- City of Sebastopol
- City of Sonoma
- Marin Municipal Water District
- North Marin Water District
- Town of Windsor
- Valley of the Moon Water District

CITY OF SANTA ROSA
NOTICE OF PUBLIC HEARING

ADOPTION OF SANTA ROSA'S 2025 URBAN WATER MANAGEMENT PLAN
AND WATER SHORTAGE CONTINGENCY PLAN

Notice is hereby given that a public hearing will be conducted by the City Council on Tuesday, June 2, 2026 at or after 5:00 p.m. The purpose of the public hearing will be to receive public comment and recommendations prior to the City Council considering the adoption of Santa Rosa's proposed 2025 Urban Water Management Plan and Water Shortage Contingency Plan.

Meeting access information (including instructions) and meeting documents are available online at: https://santa-rosa.legistar.com/Calendar.

Copies of the proposed 2025 Urban Water Management Plan and Water Shortage Contingency Plan are available online at srcity.org/UWMP and in person at City Hall, 100 Santa Rosa Ave, Santa Rosa, CA 95404, Room 10 and Municipal Service Center South, 69 Stony Circle, Santa Rosa, CA 95401.

Members of the public can provide public comment by attending in person at Council Chambers at 100 Santa Rosa Avenue, Santa Rosa during the City Council meeting.

The public can also view or listen to the meeting live at:
1. https://santa-rosa.legistar.com/Calendar. Click on the "In Progress" link to view;
2. Via Zoom by visiting https://srcity-org.zoom.us/J/83637533027, or by dialing 877-853-5257 and entering Webinar ID: 836 3753 3027;
3. Comcast Channel 28 or 26 (Español), AT&T U-Verse Channel 99; and
4. Via YouTube at https://www.youtube.com/cityofsantarosa.

Comments and questions may be directed to Claire Nordlie, Senior Water Resources Planner, Santa Rosa Water, 707-543-3962 and/or UWMP@srcity.org..

PUBLISHED: May 6 and May 17
Dina Manis, City Clerk, City of Santa Rosa

The City of Santa Rosa does not discriminate against individuals with disabilities in its employment, services, benefits, facilities, programs, or activities. Requests for accommodations, auxiliary aids, or services necessary to participate in a City program, service, or activity, including printed information in alternate formats, are available by contacting the City Clerk's Office at 707-543-3015 (TTY Relay at 711) or cityclerk@srcity.org. Requests should be submitted as far in advance as possible, but no later than two business days before the scheduled meeting.

Planning for the future...



The City of Santa Rosa is preparing a five-year update to our next Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP), consistent with state law.

The UWMP details our community's current and future water supplies and water demands through year 2050.

The WSCP provides our response plan for mild to severe water shortages.

Both documents will be available for public comment for 30 days, beginning early May 2026. A public hearing is tentatively scheduled for a June City Council meeting.

For additional information, including how you can participate in the process, please visit . . .

srcity.org/uwmp

OUR FUTURE IN EVERY DROP



La ciudad de Santa Rosa está preparando una actualización quinquenal de su Plan de Gestión del Agua Urbana (UWMP) y de su Plan de Contingencia para la Escasez de Agua (WSCP), conforme con la legislación Estatal.

El UWMP detalla los suministros de agua actuales y futuros de nuestra comunidad y las demandas de agua hasta el año 2050.

El Plan de Contingencia por Escasez de Agua (WSCP) proporciona nuestro plan de respuesta en caso de escasez de agua desde leve a grave.

Ambos documentos estarán disponibles para comentarios públicos durante 30 días, comenzando a principios de mayo de 2026. Tentativamente, una audiencia pública está programada durante la reunión del Concilio de la Ciudad del junio de 2026.

Para obtener información adicional, incluyendo cómo puede participar en el proceso, por favor visite . . .

srcity.org/uwmp

NUESTRO FUTURO EN CADA GOTA

APPENDIX C: DEPARTMENT OF WATER RESOURCES REPORTING TABLES

Templates of Submittal Tables for the Urban Water Management Plan 2025

Workbook Contents: This workbook contains the templates for Submittal Tables that Suppliers use to organize information as part of their Urban Water Management Plans 2025 (due July 1, 2026). Table numbers correspond to the chapter number where they are described in the UWMP Guidebook. If the table name is followed by a letter, the letter corresponds to whether the table is specific for Wholesale Suppliers or Retail Suppliers only (W and R, respectively). For those table names that are not followed by a letter, these are Submittal Tables for all Suppliers.

Where to submit? Suppliers submit the completed table data and UWMPs (including the Water Shortage Contingency Plan) electronically through the WUEdata Portal (https://wuedata.water.ca.gov/). The portal will be updated and will be announced to the Urban Suppliers listserv, DWR webpage and WUEdata Portal opening page when it is available for plan and table submittals.

Unlocked templates (use with caution): The templates provided in this workbook are formated to mirror the structure of information that is submitted through the WUEdata Portal for the electronic submission of Submittal Tables in the UWMP. The tables are offered in a unprotected (unlocked) version. If needed, Suppliers may adjust the tables for their own planning needs beyond the Submittal Tables. However, preparers will still need to submit the information using the original template structure provided for their UWMP. Make changes to the tables with caution, as there are formulas, automatically filled cells, and drop-downs present throughout. To redownload the templates in their original format, visit https://wuedata.water.ca.gov in the Resources button of the Urban Water Management Plan section (no login necessary).

NOTES FOR REGIONAL URBAN WATER MANAGEMENT PLANS (RUWMPs)
RUWMPs will report data for each agency in the RUWMP, requiring duplicates of the submittal tables. The supplier will copy the needed tables and notate each of the copies with the name of the agency, or some other designation, identifying the table with the corresponding agency.
WUEdata upload tool for RUWMPs
RUWMPs will submit data to the WUEdata upload tool on an individual agency basis.

Submittal Table 2-1 Retail: Public Water Systems			
Public Water System Number	Public Water System Name	Number of Municipal Connections 2025	Volume of Water Supplied 2025 (AF)
Add additional rows as needed			
CA4910009	City of Santa Rosa	55,851	17,172
	Total	55,851	17,172

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.

NOTES: Volumes are in AF. Potable water only. Recycled water connections not included.

Submittal Table 2-2: Plan Identification		
Select One	**Type of Plan**	**Name of Regional Alliance or RUWMP** (Drop Down List)
☑	**Individual UWMP**	
	If Water Supplier is also a member of a SB X7-7 Regional Alliance, select name from the drop-down.	North Marin-Sonoma Alliance
☐	**Regional Urban Water Management Plan (RUWMP)**	
	If Supplier selected RUWMP, select name from the drop-down.	
NOTES: Regional Alliance includes 7 other Sonoma County Water Agency contractors and Marin Municipal Water District.		

Submittal Table 2-3: Supplier Identification	
Type of Supplier (select one or both)	
☐	Supplier is a wholesale supplier
☑	Supplier is a retail supplier
Fiscal or Calendar Year (select one)	
☑	UWMP Tables are in calendar years
☐	UWMP Tables are in fiscal years
If using fiscal years provide month and date that the fiscal year begins (mm/dd)	
Units of measure used in UWMP (Select from the drop down list).	
Unit	AF
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	
NOTES:	

Submittal Table 2-4 Retail: Water Supplier Information Exchange **Water Code Section 10631(h)**
The retail Supplier has informed the following wholesale supplier(s) of projected water use.
Wholesale Water Supplier Name
Add additional rows as needed
Sonoma County Water Agency (Sonoma Water)
NOTES:

10631(h) An urban water supplier that relies upon a wholesale agency for a source of water shall provide the wholesale agency with water use projections from that agency for that source of water in five-year increments to 20 years or as far as data is available.

Submittal Table 2-4 Wholesale: Water Supplier Information Exchange Water Code Section 10631(h)	
☐	Check the box if the Supplier has informed more than 10 other water suppliers of water supplies available. **Completion of the table below is optional. If not completed, include a list of the water suppliers that were informed.**
	Provide page number for location of the list.
☐	Check the box if the Supplier has informed 10 or fewer other water suppliers of water supplies available. **Complete the table below.**
Water Supplier Name	
Add additional rows as needed	
NOTES:	

10631(h) ... The wholesale agency shall provide information to the urban water supplier for inclusion in the urban water supplier's plan that identifies and quantifies, to the extent practicable, the existing and planned sources of water as required by subdivision (b), available from the wholesale agency to the urban water supplier over the same five year increments, and during various water-year types in accordance with subdivision (f).

Submittal Table 3-1 Retail: Population - Current and Projected Water Code Section 10631(a)						
Population Served	2025	2030	2035	2040	2045	2050(opt)
	186,445	204,795	213,615	223,060	232,923	243,222
NOTES: Appendix E Demand Study Report Santa Rosa (EKI), Table 5-2						

CWC 10631(a) describe the current and projected population of the service area including current and projected population…

Submittal Table 3-1 Wholesale: Population - Current and Projected Water Code Section 10631(a)						
Population Served	2025	2030	2035	2040	2045	2050(opt)
NOTES:						

CWC 10631(a) describe the current and projected population of the service area…

Submittal Table 4-1 Retail: Total Uses for Potable and Non-Potable Water — Actual Water Code Section 10631(d)(1)			
Use Type	Additional Description (as needed)	2025 Actual Water Use	
Drop down list May select each use multiple times These are the only use types that will be recognized by the WUEdata online submittal tool		**Potable or Non-Potable** (OPTIONAL) Drop down list	Volume (AF)
Add additional rows as needed			
Single Family		Potable	8,359
Multi-Family		Potable	3,472
Commercial		Potable	1,970
Industrial		Potable	349
Institutional/Governmental		Potable	324
Landscape		Potable	1,452
Landscape	Recycled Water	Non-Potable	74
Other (optional)	Fireline, Construction, Yard Meter	Potable	81
Other (optional)	Other Non-Revenue Water (apparent losses, unbilled unmetered consumption)	Potable	216
Distribution System Water Loss	Real losses	Potable	567
		Subtotal Potable	16789.5
		Subtotal Non-Potable	74.1
		Total	16,864
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.			
NOTES: Real losses, apparent losses, and other authorized unbilled uses were estimated from the CY 2024 water loss audit.			

CWC 10631(d)(1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use…identifying the uses among water use sectors including but not limited to:
(A) Single-family residential.
(B) Multifamily.
(C) Commercial.
(D) Industrial.
(E) Institutional and governmental.
(F) Landscape.
(G) Sales to other agencies.
4 | Water Use Characterization
Draft | November 2025 4-10
(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.
(I) Agricultural.
(J) Distribution system water loss



Optional **Submittal Table 4-1 Wholesale: Total Uses for Potable and Non-Potable Water — Actual** **Water Code Section 10631(d)(1)**			
Use Type	Additional Description (as needed)	2025 Actual Water Use	
Drop down list May select each use multiple times These are the only use types that will be recognized by the WUEdata online submittal tool		**Potable or Non-Potable** (OPTIONAL) Drop down list	Volume (AF)
Add additional rows as needed			
		Subtotal Potable	0
		Subtotal Non-Potable	0
		Total	0
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.			
NOTES:			

10631(d) (1) for an urban retail water supplier, quantify to the extent records are available, past and current water use...

Submittal Table 4-2 Retail: Total Uses for Potable, and Non-Potable Water — Projected
Water Code Section 10631(d)(1)

Use Type	Additional Description (as needed)	Projected Water Use (Report To the Extent that Records are Available)					
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool		**Potable or Non-Potable** (OPTIONAL) Drop down list	**2030 (AF)**	**2035 (AF)**	**2040 (AF)**	**2045 (AF)**	**2050 opt (AF)**
Add additional rows as needed.							
Single Family		Potable	9,722	9,832	9,994	10,192	10,417
Multi-Family		Potable	3,763	3,872	4,006	4,158	4,323
Commercial		Potable	2,163	2,133	2,106	2,084	2,063
Industrial		Potable	343	338	334	330	327
Institutional/Governmental		Potable	329	325	321	317	314
Landscape		Potable	1,907	1,991	2,075	2,159	2,243
Landscape	Recycled Water	Non-Potable	140	140	140	140	140
Other (optional)	Fireline, Construction, Yard Meter	Potable	112	113	114	115	116
Distribution System Water Loss	Real Losses	Potable	1,035	1,070	1,107	1,145	1,186
Other (optional)	Other Non-Revenue Water (apparent losses, unbilled unmetered consumption)	Potable	239.3	247.4	256.1	264.9	274.3
		Subtotal Potable	19,613	19,921	20,313	20,765	21,263
		Subtotal Non-Potable	140	140	140	140	140
		Total	19,753	20,061	20,453	20,905	21,403

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.

NOTES: Source: Appendix E, Table 5-5

CWC 10631(d)(1) For an urban retail water supplier, quantify, to the extent records are available... projected water use...identifying the uses among water use sectors...

2050

18,963 <surface water

2300 <groundwater

140 <RW

21,403 <2050 total water availability in single and 5-dry-year scenarios

17,313 <2030 surface water availability in DRA

Optional **Submittal Table 4-2 Wholesale: Total Uses for Potable and Non-Potable Water — Projected** **Water Code Section 10631(d)(1)**							
Use Type		**Projected Water Use** (Report To the Extent that Records are Available)					
Drop down list May select each use multiple times These are the only Use Types that will be recognized by the WUEdata online submittal tool.	Additional Description (as needed)	**Potable or Non-Potable** (OPTIONAL) Drop down list	**2030 (AF)**	**2035 (AF)**	**2040 (AF)**	**2045 (AF)**	**2050 opt (AF)**
Add additional rows as needed							
		Subtotal Potable	0	0	0	0	0
		Subtotal Non-Potable	0	0	0	0	0
		Total	0	0	0	0	0
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.							
NOTES:							

10631(d) (1) for an urban retail water supplier, quantify to the extent records are available, past and current water use...

Submittal Table 4-3 Retail: Inclusion in Water Use Projections Water Code Section 10631 (a), 10631 (d)(4)(A), and 10631 (d)(4)(B)	
Are Future Water Savings Included in Projections? **Drop down list (y/n)**	Yes
If "Yes" to above, **state the section or page number**, in the cell to the right, where citations of the codes, ordinances, or otherwise are utilized in demand projections are found. ***Optional*** Suppliers may complete Optional Submittal Table 4-4 R to quantify the expected savings.	Appendix E, section 5.4
Are Lower Income Residential Demands Included In Projections? **Drop down list (y/n)**	Yes
Optional If the method for accounting Lower Income Residential Demands has been included, provide page number where this accounting can be found.	N/A
DWR NOTES: Additional guidance is provided in Appendix K.	
NOTES:	

CWC10631 (d) (4) (A) Water use projections, where available, shall display and account for water savings estimated to result from adopted codes, standards, ordinances, or transpotation and land use plans identified by the urban water supplier, as applicable to the service area.

CWC 10631 (d) (4) (B) to the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following: (i) Provide citations of the various codes, standards, ordinances or transportation and land use plans utilized in making the projections.
(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.
CWC 10631(a) Water use projections required by section 10631 shall include projected water use for single-family and multifamily residential housing needed 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 .

Optional Submittal Table 4-4 Retail: Passive Water Savings Projections Water Code Section 10631(d)(4)(A)					
Description (Codes, Standards, Ordinances, or Plans)	Passive savings				
	2030 (AF)	**2035 (AF)**	**2040 (AF)**	**2045 (AF)**	**2050 opt (AF)**
Add additional rows as needed					
Passive Water Conservation	1,201	1,642	2,042	2,413	2,770
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.					
NOTES: Appendix E Demand Study Report Santa Rosa (EKI), Table 5-4					

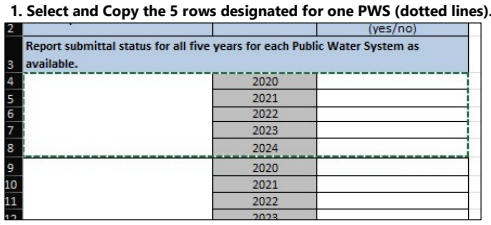
Water Code Section 10631(d)(4)(A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

Submittal Table 4-5 Retail: Water Loss Audit Reporting Water Code Section 10631(d)(3)(A)		
Public Water System ID # Reported in Table 2-1 R	Reporting Period	Submitted to DWR Water Loss Audit Program (yes/no)
Report submittal status for all five years for each Public Water System as available. Add rows as needed		
CA4910009	**2020**	Yes
	2021	Yes
	2022	Yes
	2023	Yes
	2024	Yes
DWR NOTES: Suppliers will provide a link to the WUEdata submittals of their Water Loss Audit Reports.		
NOTES: CY2020: https://wuedata.water.ca.gov/public/awwa_uploads/2618390738/Santa%20Rosa%20City%20of%20%5F%202020.xlsx CY2021: https://wuedata.water.ca.gov/public/awwa_uploads/8844892203/Santa%20Rosa%20City%20of%20%5F%202021.xlsx CY2022: https://wuedata.water.ca.gov/public/awwa_uploads/4000196158/Final%20Santa%20Rosa%20City%20of%202022.xlsx CY2023: https://wuedata.water.ca.gov/public/awwa_uploads/6117261588/City%20of%20Santa%20Rosa%20CY2023%20%2D%20Validated%20Audit.xlsx CY2024: https://wuedata.water.ca.gov/public/awwa_uploads/5419845402/City%20of%20Santa%20Rosa%20CY2024%20%2D%20Validated%20Audit.xlsx		

CWC 10631(d)(3) (A) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34.

Instructions for adding more rows

1. Select and Copy the 5 rows designated for one PWS (dotted lines).



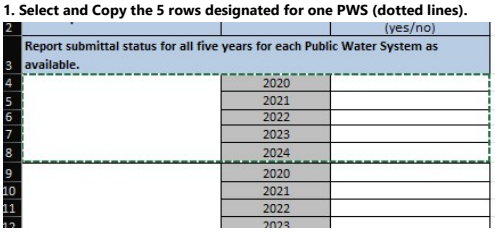
2. Right click the row and select "Insert Copied Cells" and "Shift cells down"

Optional **Submittal Table 4-5 Wholesale: Water Loss Audit Reporting Water Code Section 10631(d)(3)(A)**		
Public Water System ID #	Reporting Period	Submitted to DWR Water Loss Audit Program (yes/no)
Report submittal status for all five years for each Public Water System as available. Add rows as needed		
	2020	
	2021	
	2022	
	2023	
	2024	
DWR NOTES: Suppliers will provide a link to the WUEdata submittals of their Water Loss Audit Reports.		
NOTES:		

CWC 10631(d)(3) (A) The distribution system water loss shall be quantified for each of the five years preceding the plan update, in accordance with rules adopted pursuant to Section 10608.34.

Instructions for adding more rows

1. Select and Copy the 5 rows designated for one PWS (dotted lines).



2. Right click the row and select "Insert Copied Cells" and "Shift cells down"

Submittal Table 4-6 Retail: Progress Towards 2028 Water Loss Standard
Water Code Section 10631(d)(3)(C)

Public Water System ID # Reported in Submittal Table 2-1 R	Did the Water Board Calculate a Water Loss Standard for this Public Water System? (y/n) If no, Supplier will not complete this row.	Real Water Loss					Apparent Water Loss				
		State Water Board Standard		Most Recent AWWA Water Loss Audit			State Water Board Standard		Most Recent AWWA Water Loss Audit		
		2028 Real Water Loss Standard per Unit per day	Units for Real Water Loss Drop-down list	Number of Units (Connections or Miles corresponding with units selected)	Volume of Total Real Loss (from AWWA Water Loss Audit) (AF)	Real Water Loss Per Unit per Day	2028 Apparent Water Loss Standard per Unit per Day	Units for Apparent Water Loss	Number of Connections	Volume of Total Apparent Loss (from AWWA Water Loss Audit) (AF)	Apparent Water Loss Per Unit per Day
Add additional rows as needed.											
CA4910009	Yes	17.1	Gallons per Service Connection per Day (GPSCD)	53,681	567.1	9.4	3.5	Gallons per Service Connection per Day (GPSCD)	53,681	205.4	3.4
								Gallons per Service Connection per Day (GPSCD)			
								Gallons per Service Connection per Day (GPSCD)			
Water Board's Calculated Water Loss Standards											

DWR NOTES: Units of measure (AF, CCF, MG) for Water Loss **MUST** remain consistent with units reported in Submittal Table 2-3. The units reported in Submittal Table 2-3 are used in this table's calculations.

NOTES: Most recent AWWA Water Loss Audit was for CY 2024.

CWC 10631(d)(3)(C) In the plan due July 1, 2021, and in each update thereafter, data shall be included to show whether the urban retail water supplier met the distribution loss standards enacted by the board pursuant to Section 10608.34.

Instructions for adding more rows
1. Select and Copy the entire row (dotted lines).



2. Right click the row and select "Insert Copied Cells" and "Shift cells down"

Submittal Table 5-1 Retail: SB X7-7 2020 Target Progress Water Code Section 10608.40						
☐	**Check the box if the Supplier was not an Urban Water Supplier during or before the 2020 UWMP reporting cycle. Proceed to the next table.**					
Was Supplier part of a merger or consolidation since 2020?	Regional Alliance Target or Individual Target? Drop down list	2020 Target	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?	**Only for suppliers that did not meet the Target in 2020** **See DWR NOTES below.**	
					Actual 2025 GPCD (From SB X7-7 Compliance Form)	Did Supplier meet the 2020 Target in 2025?
No	Individual Target	126	99	Yes		NA
DWR NOTES: **Suppliers calculating a 2025 GPCD** will need to complete and submit SB X 7-7 Compliance Tables to verify the use of SB X7-7 Methodologies. **Suppliers that were part of a merger or consolidation since 2020** see Chapter 5 and Appendix P for guidance. NA=Not Applicable						
NOTES:						

10608.40 Urban water retail suppliers shall report to the department on their progress in meeting their urban water use targets as part of their urban water management plans submitted pursuant to Section 10631.

Submittal Table 6-1 Retail: Groundwater Volume Pumped
Water Code Section 10631(4) and 10631(4)(c)

☐	Check the box if the Supplier does not pump groundwater. Proceed to the next table.
☐	Check the box if all or part of the groundwater described below is desalinated. (OPTIONAL)

Groundwater Type **Drop Down List** May use each category multiple times	Potable or Non-Potable (OPTIONAL) **Drop down list**	Location or Basin Name	2021 (AF)	2022 (AF)	2023 (AF)	2024 (AF)	2025 (AF)
Add additional rows as needed							
Alluvial Basin	Potable	Santa Rosa Plain	1,324	1,057	1,234	1,001	1326.1
		Total	1,324	1,057	1,234	1,001	1,326

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.

NOTES

10631(4) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following information:

(C) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

Submittal Table 6-1 Wholesale: Groundwater Volume Pumped Water Code Section 10631(4) and 10631(4)(C)							
☐	Check the box if the Supplier does not pump groundwater.						
☐	Check the box if all or part of the groundwater described below is desalinated. (OPTIONAL)						
Groundwater Type **Drop Down List** May use each category multiple times	Potable or Non-Potable (OPTIONAL) Drop down list	Location or Basin Name	2021 (AF)	2022 (AF)	2023 (AF)	2024 (AF)	2025 (AF)
Add additional rows as needed							
		Total	0	0	0	0	0
DWR NOTES:							
NOTES:							

10631(4) If groundwater is identified as an existing or planned source of water available to the supplier, all of the following
(C) A detailed description and analysis of the location, amount, and sufficiency of groundwater pumped by the urban water supplier for the past five years. The description and analysis shall be based on information that is reasonably available, including, but not limited to, historic use records.

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area Water Code Section 10633(a)				
☐	Check the box if there is no wastewater collection system. Proceed to the next table.			
	Percentage of 2025 service area served by wastewater collection system (OPTIONAL)			
	Percentage of 2025 service area population served by wastewater collection system (OPTIONAL)			
Wastewater Collection			**Recipient of Collected Wastewater**	
Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated? OPTIONAL **Drop Down List**	Volume of Wastewater Collected from UWMP Service Area 2025 (AF)	Name of Wastewater Treatment Plant (WWTP) and Place ID Number **Drop down list**	Is WWTP Located Within UWMP Area? **Drop Down List**
Add additional rows as needed				
Santa Rosa Regional System	Estimated	21,973	Santa Rosa Laguna Subregional Water Reclamation Facility, Place ID 255703	No
Total Wastewater Received from UWMP Service Area in 2025:		21,973		
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. **Additional Guidance**: See Appendix M, Section M.21 for detailed guidance on this table.				
NOTES:				

CWC 10633(a) A description of the wastewater collection and treatment systems in the supplier's service area, including a quantification of the amount of wastewater collected and treated and the methods of wastewater disposal.

Submittal Table 6-3 Retail: Wastewater Treatment and Outcomes Within UWMP Service Area
Water Code Section 10633(b)

☐	**Check the box if no wastewater is treated or disposed of within the UWMP service area.** Proceed to the next table.

Wastewater Treatment Plant Name and Place ID Number **Drop down list**	Does This Plant Treat Wastewater Generated Outside the UWMP Service Area? (OPTIONAL) **Drop down list**	2025 Volume of Wastewater Received from UWMP Service Area (As Reported in Submittal Table 6-2 R) (AF)	Total 2025 Volume of Water Treated (AF)	**2025 Outcomes of Treated Wastewater**										
				Water Recycled Within UWMP Service Area (enter data as applicable)		**Water Recycled Outside of UWMP Service Area** (enter data as applicable)		**Effluent Discharge that is not a Permitted Recycled Water Use** (enter data as applicable)		**Required Discharge for Instream Flow** (enter data as applicable)		**Delivered to Another Entity for Additional Treatment** (enter data as applicable)		
				Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Name of other entity
Add additional rows as needed														
Santa Rosa Laguna Subregional Water Reclamation Facility	Yes	21973	21,973	Tertiary	21,973		-		0		0		0	
Total		21,973	21,973		21,973		0		0		0		0	

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.
IPR: Indirect Potable Reuse would have the treatment level of its end use requirement in the Level of Treatment drop-down.
Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.

NOTES:

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier...and shall include all of the following:
(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

Submittal Table 6-3 Wholesale: Wastewater Treatment and Discharge Within Service Area
Water Code Section 10633(b)

☐ Check the box if the Wholesale Supplier neither distributes nor provides supplemental treatment to recycled water. Proceed to the next table.

Wastewater Treatment Plant Name and Place ID Number **Drop down list**	Does This Plant Treat Wastewater Generated Outside the UWMP Service Area? (OPTIONAL) **Drop down list**	2025 Volume of Wastewater Received from UWMP Service Area (AF)	Total 2025 Volume of Water Treated (AF)	**2025 Outcomes of Treated Wastewater**										
				Water Recycled Within UWMP Service Area (enter data as applicable)		**Water Recycled Outside of UWMP Service Area** (enter data as applicable)		**Effluent Discharge that is not a Permitted Recycled Water Use** (enter data as applicable)		**Required Discharge for Instream Flow** (enter data as applicable)		**Delivered to Another Entity for Additional Treatment** (enter data as applicable)		
				Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Treatment Level **Drop down list**	Volume (AF)	Name of other entity
Add additional rows as needed.														
Total		0	0		0		0		0		0		0	

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.
IPR: Indirect Potable Reuse would have the treatment level of its end use requirement in the Level of Treatment drop-down.
Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.

NOTES:

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. ...and shall include all of the following:
(b) A description of the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area
Water Code Section 10633 (c),(d),(e)

☐	Check box if recycled water is not used and is not planned for use within the service area of the supplier. The supplier will only complete the column on "Potential Recycled Water Use" and submit an accompanying narrative on the feasibility of that potential recycled water use.

Name(s) of Facility/ies Producing (Treating) the Recycled Water (OPTIONAL) :	Laguna Treatment Plant
Name of Supplier Operating the Recycled Water Distribution System (OPTIONAL) :	
Volume of Supplemental Water Added in 2025 (OPTIONAL) :	
Source of 2025 Supplemental Water (OPTIONAL) :	

Use Type **Drop down list**	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop down list	Additional Information (as needed)	2025 (AF)	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)	**Potential Recycled Water Use**	
									Volume	Narrative page number (OPTIONAL)
Add additional rows as needed										
Landscape irrigation (exc golf courses)	Non-Potable	Parks, medians, HOAs, Commercial landscapes, Multifamily residential common areas	74	140	140	140	140	140		
		Subtotal Potable	0	0	0	0	0	0	0	
		Subtotal Non-Potable	74	140	140	140	140	140	0	
		Total	74.1	140	140	140	140	140	0	0

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.
Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.
Potential recycled water use: a description of the feasibility of these uses must be included in the narrative.
Multiple Producers: If you have multiple recycled water producers, submit a separate table for each.

NOTES:

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier... and shall include...
(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use
d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.
(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

Submittal Table 6-4 Wholesale: Current and Projected Recycled Water Uses
Water Code Section 10633(c),(d),(e)

☐ Check box if recycled water is not used and is not planned for use within the service area of the supplier. The supplier will only complete the column on "Potential Recycled Water Use" and submit an accompanying narrative on the feasibility of that potential recycled water use.

Name(s) of Facility/ies Producing (Treating) the Recycled Water (OPTIONAL) :	
Name of Supplier Operating the Recycled Water Distribution System (OPTIONAL) :	
Volume of Supplemental Water Added in 2025 (OPTIONAL) :	
Source of 2025 Supplemental Water (OPTIONAL) :	

Name of Receiving Supplier or Direct Use by Wholesale Supplier	Potable or Non-Potable (after treatment if treated) (OPTIONAL) Drop down list	Additional Information (as needed)	2025 (AF)	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)	Potential Recycled Water Use	
									Volume (AF)	Narrative page number (OPTIONAL)
Add additional rows as needed										
Subtotal Potable			0	0	0	0	0	0	0	
Subtotal Non-Potable			0	0	0	0	0	0	0	
Total			0	0	0	0	0	0	0	0

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table reports the unit of measure selected in Submittal Table 2-3.
Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.
Potential recycled water use: a description of the feasibility of these uses must be included in the narrative.
Multiple Producers: If you have multiple recycled water producers, submit a separate table for each.

NOTES:

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier... and shall include...
(c) A description of the recycled water currently being used in the supplier's service area, including, but not limited to, the type, place, and quantity of use
d) A description and quantification of the potential uses of recycled water, including, but not limited to, agricultural irrigation, landscape irrigation, wildlife habitat enhancement, wetlands, industrial reuse, groundwater recharge, indirect potable reuse, and other appropriate uses, and a determination with regard to the technical and economic feasibility of serving those uses.
(e) The projected use of recycled water within the supplier's service area at the end of 5, 10, 15, and 20 years, and a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision.

Submittal Table 6-5 Retail: 2020 UWMP Recycled Water Use Projection Compared to 2025 Actual
Water Code Section 10633(e)

☐ Check the box if recycled water was not used in 2025 nor previously projected for use in 2020.
Proceed to the next table.

Use Type Drop Down list	2020 Projection for 2025 (AF)	2025 Actual Use (AF)
Add additional rows as needed		
Landscape irrigation (exc golf courses)	140	74
Total	140	74

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure reported in Submittal Table 2-3
Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.

NOTES:

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following: (e) ...a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision

Submittal Table 6-5 Wholesale: 2020 UWMP Recycled Water Use Projection Compared to 2025 Actual
Water Code Section 10633(e)

☐ Check the box if recycled water was not used or distributed by the supplier in 2025, nor projected for use or distribution in 2020.
Proceed to the next table.

Name of Receiving Supplier or Direct Use by Wholesale Supplier	2020 Projection for 2025 (AF)	2025 Actual Use (AF)
Add additional rows as needed		
Total	0	0

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3.
Additional Guidance: See Appendix M, Section M.21 for detailed guidance on this table.

NOTES:

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the serv`ice area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following: (e) ...a description of the actual use of recycled water in comparison to uses previously projected pursuant to this subdivision

Submittal Table 6-6 Retail: Methods to Encourage Future Recycled Water Use Water Code Section 10633(f)			
☑	Check the box if the Supplier does not plan to expand recycled water use in the future. Supplier will not complete the table below but will provide narrative explanation.		
Section 6.3.3	Provide page location of narrative in the UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
Add additional rows as needed			
		Total (AF)	0
		Unit Conversion to AF	0
DWR NOTES: **Units of measure** (AF, CCF, MG) MUST remain consistent with units reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. **The unit conversion to Acre Feet** addresses the Water Code's requirement that this value be provided in acre-feet.			
NOTES:			

10633. The plan shall provide, to the extent available, information on recycled water and its potential for use as a water source in the service area of the urban water supplier. The preparation of the plan shall be coordinated with local water, wastewater, groundwater, and planning agencies that operate within the supplier's service area, and shall include all of the following:
(f) a description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre feet of recycled water used per year.

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs Water Code Section 10631(f)							
☐	Check the box if there are no expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Proceed to the next table.						
☑	Check the box if some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.						
Section 6.7	Provide page location of narrative in the UWMP						
Name of Future Projects or Programs	Joint Project with other suppliers?		Additional Description (as needed)	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Planned Implementation Year	Planned for Use in Year Type **Drop Down List**	Expected Increase in Water Supply to Supplier (This may be a range) (AF)
	Drop Down List (yes/no)	If Yes, Supplier Name					
Add additional rows as needed							
Water Supply Alternatives Plan	No		See more details in Section 6.7	Potable	2035-2040	All Year Types	800 - 1,800
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure reported in Submittal Table 2-3.							
NOTES: There are other potential supply options that may be implemented. Future UWMPs will continue to be revised as new projections are known with more certainty.							

10631 (f) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in normal and single-dry water years and for a period of drought lasting five consecutive water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

Submittal Table 6-7 Wholesale: Expected Future Water Supply Projects or Programs Water Code Section 10631(f)							
☐	Check the box if there are no expected future water supply projects or programs that provide a quantifiable increase to the agency's water supply. Proceed to the next table.						
☐	Check the box if some or all of the supplier's future water supply projects or programs are not compatible with this table and are described in a narrative format.						
	Provide page location of narrative in the UWMP						
Name of Future Projects or Programs	Joint Project with other suppliers?		Additional Description (as needed)	Potable or Non-Potable (after treatment if treated) (OPTIONAL) Drop down list	Planned Implementation Year	Planned for Use in Year Type **Drop Down list**	Expected Increase in Water Supply to Supplier (This may be a range) (AF)
	Drop Down List (yes/no)	If Yes, Supplier Name					
Add additional rows as needed							
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure reported in Submittal Table 2-3.							
NOTES:							

10631 (f) Include a description of all water supply projects and water supply programs that may be undertaken by the urban water supplier to meet the total projected water use, as established pursuant to subdivision (a) of Section 10635. The urban water supplier shall include a detailed description of expected future projects and programs that the urban water supplier may implement to increase the amount of the water supply available to the urban water supplier in normal and single-dry water years and for a period of drought lasting five consecutive water years. The description shall identify specific projects and include a description of the increase in water supply that is expected to be available from each project. The description shall include an estimate with regard to the implementation timeline for each project or program.

Submittal Table 6-8 Retail: Water Supplies — Actual Water Code Section 10631(b)				
Water Supply		**2025**		
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Description (as needed)	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Actual Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)
Add additional rows as needed				
Purchased or Imported Water	Sonoma Water	Potable	15,846	
Groundwater (not desalinated)	City production wells	Potable	1,326	
Recycled Water	Santa Rosa Regional Reuse Facility	Non-Potable	74	
		Subtotal Potable	17,172	0
		Subtotal Non-Potable	74	0
		Total	17,246	0
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. **Total Entitlement:** e.g. Water Right, Groundwater Allocation, Contracted Amount.				
NOTES:				

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following... (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information...

Submittal Table 6-8 Wholesale: Water Supplies — Actual Water Code Section 10631(b)				
Water Supply	Additional Description (as needed)	2025		
Drop down list May use each category multiple times.These are the only water supply categories that will be recognized by the WUEdata online submittal tool		**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Actual Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)
Add additional rows as needed				
		Subtotal Potable	0	0
		Subtotal Non-Potable	0	0
		Total	0	0
DWR NOTES: **Units of measure (AF, CCF, MG)** must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in Submittal Table 2-3. **Total Entitlement**: e.g. Water Right, Groundwater Allocation, Contracted Amount.				
NOTES:				

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following... (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year increments described in subdivision (a), providing supporting and related information

Optional **Table 6-8DS: Source Water Desalination by Urban Water Supplier**

☐	Check the box if the Supplier does not reduce salinity in either groundwater or surface water prior to distribution.

Desalination Facility **Drop Down list**	Plant Capacity	Intake Type **Drop down list**	Source Water Type **Drop down list**	Influent TDS	Brine Discharge **Drop down list**	Volume of Water Desalinated					Name(s) of Agencies that Receive this Water
						2021 (AF)	**2022 (AF)**	**2023 (AF)**	**2024 (AF)**	**2025 (AF)**	
Add additional rows as needed											
					Total	0	0	0	0	0	

DWR NOTES:

Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submital Table 2-3. This table identifies the units of measure reported in Submittal Table 2-3.

NOTES:

Submittal Table 6-9 Retail: Water Supplies — Projected
Water Code Section 10631 (b)

Water Supply			Projected Water Supply (Report to the Extent Practicable)									
			2030		2035		2040		2045		2050 (opt)	
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)
Add additional rows as needed												
Purchased or Imported Water		Potable	29,100		29,100		29,100		29,100		29,100	
Groundwater (not desalinated)		Potable	2,300		3,100		4,100		4,100		4,100	
Recycled Water		Non-Potable	140		140		140		140		140	
Subtotal Potable			31,400	0	32,200	0	33,200	0	33,200	0	33,200	0
Subtotal Non-Potable			140	0	140	0	140	0	140	0	140	0
Total			31,540	0	32,340	0	33,340	0	33,340	0	33,340	0

DWR NOTES:
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.
Total Entitlement: e.g. Water Right, Groundwater Allocation, Contracted Amount.

NOTES:

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following... (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year

Submittal Table 6-9 Wholesale: Water Supplies — Projected
Water Code Section 10631 (b)

Water Supply			Projected Water Supply (Report to the Extent Practicable)									
			2030		2035		2040		2045		2050 (opt)	
Drop down list May use each category multiple times.These are the only water supply categories that will be recognized by the WUEdata online submittal tool	Additional Detail on Water Supply	**Potable or Non-Potable** (after treatment if treated) (OPTIONAL) Drop Down list	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)	Reasonably Available Volume (AF)	Total Entitlement (OPTIONAL) See 'DWR Notes' below (AF)
Add additional rows as needed												
Subtotal Potable			0	0	0	0	0	0	0	0	0	0
Subtotal Non-Potable			0	0	0	0	0	0	0	0	0	0
Total			0	0	0	0	0	0	0	0	0	0

DWR NOTES:

Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table identifies the unit of measure selected in a Submittal Table 2-3.

Total Entitlement: e.g. Water Right, Groundwater Allocation, Contracted Amount.

NOTES:

10631. A plan shall be adopted in accordance with this chapter that shall do all of the following... (b) Identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier over the same five-year

Optional Submittal Table O-1A: Recommended Energy Reporting - SINGLE DELIVERY PRODUCT - WATER SUPPLY PROCESS APPROACH

Water Delivery Product drop down list (If delivering more than one type of product recommend using Table O-1C)		**Only for Water Delivery Products Under the Urban Water Supplier's Operational Control**								
Start Date of Reporting Period		**Water Management Process**							**Non-Consequential Hydropower (if applicable)**	
End Date of Reporting Period										
Is upstream embedded energy included in the values reported?										
		Units for Water Volume	Extract and Divert	Place into Storage	Conveyance	Treatment	Distribution	**Total Utility** See DWR NOTES	Hydropower	Net Utility
Volume of Water Entering Process										0
Energy Consumed (kWh)		N/A						0		0
Energy Intensity (kWh/vol. converted to MG)		N/A	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.00

DWR NOTES: Total Utility: The volume of water entered in the "Total Utility" column should equal the volume of water entering the distribution system (excluding recycled water); in most cases, this is the total volume calculated in UWMP Table 4-1: 2025 Actual Total Uses for Potable and Non-Potable Water. Note if recycled water is included in your Submittal Table 4-1, you must exclude it from your volume in this table.

Quantity of Self-Generated Renewable Energy

0 kWh

Data Quality (Estimate, Metered Data, Combination of Estimates and Metered Data)

Data Quality Narrative:

Narrative:

NOTES:

10631.2. (a) In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:

(1) An estimate of the amount of energy used to extract or divert water supplies.
(2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.

(3) An estimate of the amount of energy used to treat water supplies.
(4) An estimate of the amount of energy used to distribute water supplies though its distribution systems.

(5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.
(6) An estimate of the amount of energy used to place water into or withdraw from storage.

(7) Any other energy-related information the urban water supplier deems appropriate.

10631.2 (b) The Department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems.

Optional Submittal Table O-1B: Recommended Energy Reporting - SINGLE DELIVERY PRODUCT - TOTAL UTILITY APPROACH

Water Delivery Product drop down list (If delivering more than one type of product recommend using Table O-1C)		**Only for Water Delivery Products Under the Urban Water Supplier's Operational Control**		
Start Date of Reporting Period		**Sum of All Water Management Processes**	**Non-Consequential Hydropower**	
End Date of Reporting Period				
Is upstream embedded energy in the values reported?				
Units of Measure for Water		**Total Utility** See DWR NOTES	**Hydropower**	**Net Utility**
Volume of Water Entering Process				-
Energy Consumed (kWh)				-
Energy Intensity (kWh/vol. converted to MG)		-	-	-

DWR NOTES:

Total Utility: The volume of water entered in the "Total Utility" column should equal the volume of water entering the distribution system (excluding recycled water); in most cases, this is the total volume calculated in UWMP Table 4-1: 2025 Actual Total Uses for Potable and Non-Potable Water. Note if recycled water is included in your Submittal Table 4-1, you must exclude it from your volume in this table.

Quantity of Self-Generated Renewable Energy

0 kWh

Data Quality (Estimate, Metered Data, Combination of Estimates and Metered Data)

Data Quality Narrative:

Narrative:

NOTES:

10631.2. (a) In addition to the requirements of Section 10631, an urban water management plan shall include any of the following information that the urban water supplier can readily obtain:
(1) An estimate of the amount of energy used to extract or divert water supplies.
(2) An estimate of the amount of energy used to convey water supplies to the water treatment plants or distribution systems.
(3) An estimate of the amount of energy used to treat water supplies.
(4) An estimate of the amount of energy used to distribute water supplies though its distribution systems.

(5) An estimate of the amount of energy used for treated water supplies in comparison to the amount used for nontreated water supplies.
(6) An estimate of the amount of energy used to place water into or withdraw from storage.

(7) Any other energy-related information the urban water supplier deems appropriate.

10631.2 (b) The Department shall include in its guidance for the preparation of urban water management plans a methodology for the voluntary calculation or estimation of the energy intensity of urban water systems.

Optional Submittal Table O-1C: Recommended Energy Reporting - MULTIPLE WATER DELIVERY PRODUCTS - WATER PROCESS APPROACH

Start Date of Reporting Period	1/1/2024
End Date of Reporting Period	12/31/2024
Is upstream embedded energy in the values reported?	No
Units of Measure for Water	AF

Only for Water Delivery Products Under the Urban Water Supplier's Operational Control

	Water Management Processes						Non-Consequential Hydropower (if applicable)	
	Extract and Divert	Place into Storage	Conveyance	Treatment	Distribution	**Total Utility See DWR NOTES**	**Hydropower**	**Net Utility**
Total Volume of Water Entering Each Process for All Product Types	1001				17196	17196		N/A
Retail Potable Deliveries (%)	100%				100%	Enter in Column C of table below		
Retail Non-Potable Deliveries (%)								
Wholesale Potable Deliveries(%)								
Wholesale Non-Potable Deliveries (%)								
Agricultural Deliveries (%)								
Environmental Deliveries (%)								
Other (%)								
Total Percentage [must equal 100%]	100%	0%	0%	0%	100%	N/A	0%	N/A
Total Energy Consumed by Each Process for All Product Types (kWh)	913,523				2,627,815	3,541,338		3,541,338
Energy Intensity (kWh/vol. converted to MG)	2800.1	0.0	0.0	0.0	469.0	N/A	0.0	N/A

DWR NOTES: The volume of water entered in the "Total Utility" column should equal the volume of water entering the distribution system (excluding recycled water); in most cases, this is the total volume calculated in UWMP Table 4-1: 2025 Actual Total Uses for Potable and Non-Potable Water. Note if recycled water is included in your Submittal Table 4-1, you must exclude it from your volume in this table.

Product Type	Delivery Volume by Product (volume units defined above)	Total Energy Intensity (kWh/volume)	Net Energy Intensity (kWh/volume)
Retail Potable	17196	205.9	205.9
Retail Non-Potable		-	-
Wholesale Potable		-	-
Wholesale Non-Potable		-	-
Agricultural		-	-
Environmental		-	-
Other		-	-
Total of All Products	**17196**	**205.9**	**205.9**

DWR NOTES: The volume of water entered in the "Total Utility" column should equal the volume of water entering the distribution system (excluding recycled water); in most cases, this is the total volume calculated in UWMP Table 4-1: 2025 Actual Total Uses for Potable and Non-Potable Water. Note if recycled water is included in your Submittal Table 4-1, you must exclude it from the volume reported in Table O1-C..

Quantity of Self-Generated Renewable Energy

65340 kWh

Data Quality (drop down)

Combination of Estimates and Metered Data

Data Quality Narrative:

Water volume data is calculated using City records and local power provider billing information.

Narrative:

Energy is consumed during water pumping and distribution. Energy is produced through solar arrays.

NOTES:

Optional Submittal Table O-2: Recommended Energy Reporting - WASTEWATER AND RECYCLED WATER					
Start Date of Reporting Period	1/1/2024	Only for Water Delivery Products Under the Urban Water Supplier's Operational Control			
End Date of Reporting Period	12/31/2024				
Is upstream embedded energy in the values reported?	No	Water Management Process			
Units of Measure for Water	AF	Collection / Conveyance	Treatment	Discharge / Distribution	Total
Volume of Wastewater Entering Process (volume units selected above)		21973			21973
Wastewater Energy Consumed (kWh)		499008.7			499008.7
Wastewater Energy Intensity (kWh/volume converted to MG)		69.7	0.0	0.0	69.7
Volume of Recycled Water Entering Process (volume units selected above)			21973	89	22062
Recycled Water Energy Consumed (kWh)			28437717	2193923	30631640
Recycled Water Energy Intensity (kWh/volume converted to MG)		0.0	3971.8	75650.9	4261.0

Quantity of Self-Generated Renewable Energy related to recycled water and wastewater operations

11423100 kWh

Data Quality (drop down)

Metered Data

Data Quality Narrative:

Data is not readily available to break wastewater entering into process, into collection/conveyance, treatment and discharge/distribution. All wastewater data is therefore grouped under treatment.

Narrative:

Energy is consumed during water pumping, reclamation and recycling processes. Energy is produced through on combined heat and power system.

NOTES:

Optional Submittal Table 7-1 Retail: Basis of Water Year Data (Reliability Assessment)

Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2024-2025, use 2025	Available Supplies if Year Type Repeats	
		☐	Check the box if quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. **Location:** [insert location from UWMP]
		Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available (AF)	**% of Average Supply**
Average Year	1999	31,540	100%
Single-Dry Year	1977	22,053	
Consecutive Dry Years 1st Year	1987	22,053	
Consecutive Dry Years 2nd Year	1988	22,053	
Consecutive Dry Years 3rd Year	1989	22,053	
Consecutive Dry Years 4th Year	1990	22,053	
Consecutive Dry Years 5th Year	1991	22,053	

DWR NOTES: Supplier may use multiple versions of Submittal Table 7-1 R if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Submittal Table 7-1 R, in the "Note" section of each submittal table, state that multiple versions of Submittal Table 7-1 R are being used and identify the particular water source that is being reported in each submittal table.
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table reports the units of measure reported in Submittal Table 2-3.

NOTES: All supplies reported in this table are based on 2030 projected conditions. Additional supplies are estimated to be available in all year types based on new projects coming online in future years, and due to changing demands. Average year supplies are based on 29,100 AFY contract water entitlement plus 2,300 AFY of groundwater and 140 AFY of recycled water. The remaining dry years are based on the same assumptions for groundwater and recycled water, plus an assumption of contract water supply availability equaling 2030 total potable demands.

OPTIONAL Submittal Table 7-1 Wholesale: Basis of Water Year Data (Reliability Assessment)

Year Type	Base Year If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 2024-2025, use 2025	Available Supplies if Year Type Repeats	
		☐ Check the box if quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. **Location:** [insert location from UWMP]	
		Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available (AF)	**% of Average Supply**
Average Year			100%
Single-Dry Year			
Consecutive Dry Years 1st Year			
Consecutive Dry Years 2nd Year			
Consecutive Dry Years 3rd Year			
Consecutive Dry Years 4th Year			
Consecutive Dry Years 5th Year			

DWR NOTES: Supplier may use multiple versions of Submittal Table 7-1 W if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If a Supplier uses multiple versions of Submittal Table 7-1 W, in the "Note" section of each submittal table, state that multiple versions of Submittal Table 7-1 W are being used and identify the particular water source that is being reported in each submittal table.
Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3. This table reports the unit of measure selected in Submittal Table 2-3.

NOTES:

Submittal Table 7-2 Retail: Normal Year Supply and Use Comparison Water Code Section 10635 (a)					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals (autofill from Submittal Table 6-9 R)	31,540	32,340	33,340	33,340	33,340
Use totals (autofill from Submittal Table 4-2 R)	19,753	20,061	20,453	20,905	21,403
Surplus/(shortfall)	11,787	12,279	12,887	12,435	11,937
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES : Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES:					

If you choose to fill these optional tables, please paste the combined information in the submittal table to the left.

OPTIONAL Submittal Table 7-2 Retail: Normal Year Supply and Use Comparison - POTABLE					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals (autofill from Submittal Table 6-9 R)	31,400	32,200	33,200	33,200	33,200
Use totals (autofill from Submittal Table 4-2 R)	19,613	19,921	20,313	20,765	21,263
Surplus/(shortfall)	11,787	12,279	12,887	12,435	11,937
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
NOTES:					

OPTIONAL Submittal Table 7-2 Retail: Normal Year Supply and Use Comparison - NON-POTABLE					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals (autofill from Submittal Table 6-9 R)	140	140	140	140	140
Use totals (autofill from Submittal Table 4-2 R)	140	140	140	140	140
Surplus/(shortfall)	0	0	0	0	0
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
NOTES:					

10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment **shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments,** for a **normal**

Submittal Table 7-2 Wholesale: Normal Year Supply and Use Comparison Water Code Section 10635 (a)					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals (autofill from Submittal Table 6-9 W)	0	0	0	0	0
Use totals (see OPTIONAL Submittal Table 4-2 W)					
Surplus/(shortfall)	0	0	0	0	0
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES : Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES:					

If you choose to fill these optional tables, please paste the combined information in the submittal table to the left.

OPTIONAL Submittal Table 7-2 Wholesale: Normal Year Supply and Use Comparison - POTABLE					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals (autofill from Submittal Table 6-9 W)	0	0	0	0	0
Use totals (see OPTIONAL Submittal Table 4-2 W)					
Surplus/(shortfall)	0	0	0	0	0
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
NOTES					

OPTIONAL Submittal Table 7-2 Wholesale: Normal Year Supply and Use Comparison - NON-POTABLE					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals (autofill from Submittal Table 6-9 W)	0	0	0	0	0
Use totals (see OPTIONAL Submittal Table 4-2 W)					
Surplus/(shortfall)	0	0	0	0	0
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
NOTES					

Submittal Table 7-3 Retail: Single Dry Year Supply and Use Comparison Water Code Section 10635(a)					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals	22,053	23,161	24,553	25,005	25,503
Use totals	19,753	20,061	20,453	20,905	21,403
Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES : Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES					

10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment **shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments,** for a normal water year, a **single dry water year**, and a drought lasting five consecutive water years.

If you choose to fill these optional tables, please paste the combined information in the submittal table to the left.

OPTIONAL Submittal Table 7-3 Retail: Single Dry Year Supply and Use Comparison - POTABLE					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals	21,913	23,021	24,413	24,865	25,363
Use totals	19,613	19,921	20,313	20,765	21,263
Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES : Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES					

OPTIONAL Submittal Table 7-3 Retail: Single Dry Year Supply and Use Comparison - NON-POTABLE					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals	140	140	140	140	140
Use totals	140	140	140	140	140
Surplus/(shortfall)	0	0	0	0	0
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES : Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES					

Submittal Table 7-3 Wholesale: Single Dry Year Supply and Use Comparison Water Code Section 10635(a)					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals					
Use totals					
Surplus/(shortfall)					
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES:					

If you choose to fill these optional tables, please paste the combined information in the submittal table to the left.

OPTIONAL Submittal Table 7-3 Wholesale: Single Dry Year Supply and Use Comparison - POTABLE					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals					
Use totals					
Surplus/(shortfall)					
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES:					

OPTIONAL Submittal Table 7-3 Wholesale: Single Dry Year Supply and Use Comparison - NON-POTABLE					
	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals					
Use totals					
Surplus/(shortfall)					
OPTIONAL Planned WSCP Actions					
WSCP - supply augmentation benefit					
WSCP - use reduction savings benefit					
Revised Surplus/(shortfall)					
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.					
NOTES:					

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Use Comparison
Water Code Section 10635(a)

		2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
First year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Second year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
	OPTIONAL WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Third year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fourth year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fifth year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.

NOTES:

If you choose to fill these optional tables, please paste the combined information in the submittal table to the left.

OPTIONAL Submittal Table 7-4 Retail: Multiple Dry Years Supply and Use Comparison - POTABLE

		2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
First year	Supply totals	21,913	23,021	24,413	24,865	25,363
	Use totals	19,613	19,921	20,313	20,765	21,263
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Second year	Supply totals	21,913	23,021	24,413	24,865	25,363
	Use totals	19,613	19,921	20,313	20,765	21,263
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
	OPTIONAL WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Third year	Supply totals	21,913	23,021	24,413	24,865	25,363
	Use totals	19,613	19,921	20,313	20,765	21,263
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fourth year	Supply totals	21,913	23,021	24,413	24,865	25,363
	Use totals	19,613	19,921	20,313	20,765	21,263
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fifth year	Supply totals	21,913	23,021	24,413	24,865	25,363
	Use totals	19,613	19,921	20,313	20,765	21,263
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.

NOTES:

OPTIONAL Submittal Table 7-4 Retail: Multiple Dry Years Supply and Use Comparison - NON-POTABLE

		2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
First year	Supply totals	140	140	140	140	140
	Use totals	140	140	140	140	140
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Second year	Supply totals	140	140	140	140	140
	Use totals	140	140	140	140	140
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Third year	Supply totals	140	140	140	140	140
	Use totals	140	140	140	140	140
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fourth year	Supply totals	140	140	140	140	140
	Use totals	140	140	140	140	140
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fifth year	Supply totals	140	140	140	140	140
	Use totals	140	140	140	140	140
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.

NOTES:

10635. (a) Every urban water supplier shall include, as part of its urban water management plan, an assessment of the reliability of its water service to its customers during normal, dry, and multiple dry water years. This water supply and demand assessment **shall compare the total water supply sources available to the water supplier with the long-term total projected water use over the next 20 years, in five-year increments,** for a normal water year, a single dry water

Submittal Table 7-4 Wholesale: Multiple Dry Years Supply and Use Comparison
Water Code Section 10635(a)

		2030 (AF	2035 (AF	2040 (AF	2045 (AF	2050 (AF
First year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Second year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Third year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fourth year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fifth year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.

NOTES:

If you choose to fill these optional tables, please paste the combined information in the submittal table to the left.

OPTIONAL Submittal Table 7-4 Wholesale: Multiple Dry Years Supply and Use Comparison - POTABLE

		2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
First year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Second year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Third year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fourth year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fifth year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.

NOTES:

OPTIONAL Submittal Table 7-4 Wholesale: Multiple Dry Years Supply and Use Comparison - NON-POTABLE

		2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
First year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Second year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Third year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fourth year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					
Fifth year	Supply totals					
	Use totals					
	Surplus/(shortfall)	0	0	0	0	0
	OPTIONAL Planned WSCP Actions					
	WSCP - supply augmentation benefit					
	WSCP - use reduction savings benefit					
	Revised Surplus/(shortfall)					

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.

NOTES:

Submittal Table 7-5 Retail: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)	
2026	**Total**
Total Water Use (AF)	17,800
Total Supplies (AF)	17,801
Surplus/Shortfall w/o WSCP Action	1
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2027	**Total**
Total Water Use (AF)	18,288
Total Supplies (AF)	18,289
Surplus/Shortfall w/o WSCP Action	1
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2028	**Total**
Total Water Use (AF)	18,777
Total Supplies (AF)	18,777
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2029	**Total**
Total Water Use (AF)	19,265
Total Supplies (AF)	19,266
Surplus/Shortfall w/o WSCP Action	1
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2030	**Total**
Total Water Use (AF)	19,753
Total Supplies (AF)	19,754
Surplus/Shortfall w/o WSCP Action	1
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	
NOTES:	

10635 (b) Every urban water supplier shall include, as part of its urban water management plan, a **drought risk assessment** for its water service... The drought risk assessment shall include each of the following:

(1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.
(2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.
(3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.
(4) Considerations of the historical drought hydrology, ...

If you choose to fill these optional tables, please paste the combined information in the submittal table to the left.

OPTIONAL Submittal Table 7-5 Retail: Five-Year Drought Risk Assessment -	
2026	**Total**
Total Water Use (AF)	17,660
Total Supplies (AF)	17,661
Surplus/Shortfall w/o WSCP Action	1
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2027	**Total**
Total Water Use (AF)	18,148
Total Supplies (AF)	18,149
Surplus/Shortfall w/o WSCP Action	1
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2028	**Total**
Total Water Use (AF)	18,637
Total Supplies (AF)	18,637
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2029	**Total**
Total Water Use (AF)	19,125
Total Supplies (AF)	19,126
Surplus/Shortfall w/o WSCP Action	1
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2030	**Total**
Total Water Use (AF)	19,613
Total Supplies (AF)	19,614
Surplus/Shortfall w/o WSCP Action	1
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	
NOTES:	

OPTIONAL Submittal Table 7-5 Retail: Five-Year Drought Risk Assessment -	
2026	**Total**
Total Water Use (AF)	140
Total Supplies (AF)	140
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2027	**Total**
Total Water Use (AF)	140
Total Supplies (AF)	140
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2028	**Total**
Total Water Use (AF)	140
Total Supplies (AF)	140
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2029	**Total**
Total Water Use (AF)	140
Total Supplies (AF)	140
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2030	**Total**
Total Water Use (AF)	140
Total Supplies (AF)	140
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	
NOTES:	

Submittal Table 7-5 Wholesale: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)	
2026	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2027	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2028	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2029	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2030	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.	
NOTES:	

10635 (b) Every urban water supplier shall include, as part of its urban water management plan, a **drought risk assessment** for its water service... The drought risk assessment shall include each of the following:

(1) A description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive water years, starting from the year following when the assessment is conducted.
(3) A comparison of the total water supply sources available to
the water supplier with the total projected water use for the
drought period.
(4) Considerations of the historical drought hydrology, ...

(2) A determination of the reliability of each source of supply under a variety of water shortage conditions. This may include a determination that a particular source of water supply is fully reliable under most, if not all, conditions.

(3) A comparison of the total water supply sources available to the water supplier with the total projected water use for the drought period.

If you choose to fill these optional tables, please paste the combined information in the submittal table to the left.

OPTIONAL Submittal Table 7-5 Wholesale: Five-Year Drought Risk	
2026	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2027	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2028	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2029	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2030	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout	
NOTES:	

OPTIONAL Submittal Table 7-5 Wholesale: Five-Year Drought Risk	
2026	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2027	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2028	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2029	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
2030	**Total**
Total Water Use (AF)	
Total Supplies (AF)	
Surplus/Shortfall w/o WSCP Action	0
OPTIONAL Planned WSCP Actions (use reduction and supply augmentation)	
WSCP - supply augmentation benefit (AF)	
WSCP - use reduction savings benefit (AF)	
Revised Surplus/(shortfall)	
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout	
NOTES:	

Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels Water Code Section 10632(a)(3)(B)			
☐	Check the box if the Supplier uses the Standard six levels of water shortage. Proceed to the next table.		
Standard Shortage Levels	**Percent Shortage Range**	**Suppliers Shortage Levels**	**Percent Shortage Range**
1	Up to 10%	1	Up to 10%
2	Up to 20%	2 & 3	Up to 15% (2) Up to 20% (3)
3	Up to 30%	4 & 5	Up to 25% (4) Up to 30% (5)
4	Up to 40%	6	Up to 40%
5	Up to 50%	7	Up to 50%
6	>50%	8	>50%
NOTES: (a) Stage 1 is voluntary			

10632 (a) Every urban water supplier shall prepare and adopt a water shortage contingency plan as part of its urban water management plan that consists of each of the following elements:

(3)(A)Six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. **Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use.** Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events.

(B) An urban water supplier with an existing water shortage contingency plan that uses different water shortage levels may comply with the requirement in subparagaph (A) by developing and including a cross-reference relating its existing categores to the six standard water shortage levels.

Submittal Table 8-2 Retail: Supply Augmentation and Other Actions Water Code Section 10632(a)(4)(A),(C) and (E)				
No	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier **Drop down list** These are the only categories that will be accepted by the WUEdata online submittal tool	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
Add additional rows as needed				
Any	Other Actions (describe)	Volume	2,300	In non-irrigation months, production wells can be activated as emergency augmented water supply in the case of catastrophic/sudden water supply reduction.
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.				
NOTES:				

10632(a)(4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:

(A) Locally appropriate supply augmentation actions.

(C) Locally appropriate operational changes.

(E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.

Submittal Table 8-2 Wholesale: Supply Augmentation and Other Actions Water Code Section 10632(a)(4)(A),(C) and (E)				
	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier **Drop down list** These are the only categories that will be accepted by the WUEdata online submittal tool	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
Add additional rows as needed				
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.				
NOTES:				

10632(a)(4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:

(A) Locally appropriate supply augmentation actions.

(C) Locally appropriate operational changes.

(E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.

Submittal Table 8-3 Retail: Demand Reduction Actions
Water Code Section 10632(a)(4)(B),(D), and (E)

No	Is the Supplier completing this table using the standard six levels? (yes/no)				
Shortage Level	Demand Reduction Actions **Drop down list** These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)	Penalty, Charge, or Other Enforcement? **For Retail Suppliers Only** Drop Down List
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)		
Add additional rows as needed					
1	Expand Public Information Campaign	Percentage	15-20%	Based on community response to calls for reductions over the past 30 years	No
1	Offer Water Use Surveys	Percentage	<0.5%	Always offered. Expect increase in participation. Water savings based on 2014-2016 drought	No
1	Provide Rebates on Plumbing Fixtures and Devices	Percentage	<0.5%	Always offered. Expect increase in participation. Water savings based on 2014-2016 drought	No
1	Provide Rebates for Landscape Irrigation Efficiency	Percentage	<0.5%	Always offered. Expect increase in participation. Water savings based on 2014-2016 drought	No
1	Provide Rebates for Turf Replacement	Percentage	<0.5%	Always offered. Expect increase in participation. Water savings based on 2014-2016 drought	No
1	Decrease Line Flushing	Percentage	<0.5%	Average total annual flushing is approximately 0.5% of total water.	No
1	Increase Water Waste Patrols	Percentage	<0.5%	Includes all water waste enforcement efforts.	Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Percentage	<0.5%	Always prohibited (Water Waste Ord).	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Percentage	<0.5%	Always prohibited (Water Waste Ord).	Yes
1	Other - Require automatic shut of hoses	Percentage	<0.5%	Required for garden and utility hoses	Yes
1	Other - Prohibit use of potable water for washing hard surfaces	Percentage	<0.5%	Prohibit hosing off hard surfaces.	Yes
2	Expand Public Information Campaign	Percentage	15-20%	Based on community response to calls for reductions over the past 30 years	No
2	Other	Percentage	1-3%	Combined savings for actions continued from previous stage	Yes
2	Implement or Modify Drought Rate Structure or Surcharge	Percentage	1-5%	Water Shortage Charge (5% of customer usage rates)	Yes
2	CII - Restaurants may only serve water upon request	Percentage	<0.5%		Yes
2	CII - Lodging establishment must offer opt out of linen service	Percentage	<0.5%		Yes
3	Expand Public Information Campaign	Percentage	15-20%	Based on community response to calls for reductions over the past 30 years	No
3	Other	Percentage	1-3%	Combined savings for actions continued from previous stages	Yes
3	Implement or Modify Drought Rate Structure or Surcharge	Percentage	5-7%	Water Shortage Charge (7.5% of customer usage rates)	Yes
3	Other - Prohibit use of potable water for washing hard surfaces	Percentage	0-5%	Prohibit use of potable water for pressure washing.	Yes
3	Landscape - Limit landscape irrigation to specific times	Percentage	0-15%	Irrigation limited to 8 PM to 6 AM. Savings varies based on time of year/season	Yes
4	Expand Public Information Campaign	Percentage	15-20%	Based on community response to calls for reductions over the past 30 years	No
4	Other	Percentage	3-5%	Combined savings for actions continued from previous stages	Yes
4	Implement or Modify Drought Rate Structure or Surcharge	Percentage	7-10%	Water Shortage Charge (10% of customer usage rates)	Yes
4	Water Features - Restrict water use for decorative water features, such as fountains	Percentage	<0.5%	Prohibit operation of ornamental fountains and water features	Yes
5	Expand Public Information Campaign	Percentage	15-20%	Based on community response to calls for reductions over the past 30 years	No
5	Other	Percentage	3-5%	Combined savings for actions continued from previous stages	Yes
5	Implement or Modify Drought Rate Structure or Surcharge	Percentage	10-15%	Water Shortage Charge (15% of customer usage rates)	Yes
5	Implement or Modify Drought Rate Structure or Surcharge	Percentage	5-10%	Water Allocations in effect and enforced by Excess Use Penalty	Yes
5	Other water feature or swimming pool restriction	Percentage	<0.5%	Prohibit filling of new pools/spas	Yes
5	Other - Prohibit use of potable water for construction and dust control	Percentage	<0.5%	Require use of recycled water if available and filling station within one-mile radius	Yes
5	Moratorium or Net Zero Demand Increase on New Connections	Percentage	0-1%	New construction must offset demand by 1:1 ratio	Yes
6	Expand Public Information Campaign	Percentage	15-20%	Based on community response to calls for reductions over the past 30 years	No
6	Other	Percentage	3-5%	Combined savings for actions continued from previous stages	Yes
6	Implement or Modify Drought Rate Structure or Surcharge	Percentage	15-20%	Water Shortage Charge (25% of customer usage rates)	Yes
6	Implement or Modify Drought Rate Structure or Surcharge	Percentage	10-15%	Water Allocations in effect and enforced by Excess Use Penalty	Yes
6	Other water feature or swimming pool restriction	Percentage	<0.5%	Prohibit filling or topping off existing pools/spas	Yes
6	Landscape - Prohibit certain types of landscape irrigation	Percentage	<0.5%	Prohibit installation of water-using landscape at new construction	Yes
7	Expand Public Information Campaign	Percentage	15-20%	Based on community response to calls for reductions over the past 30 years	No
7	Other	Percentage	3-5%	Combined savings for actions continued from previous stages	Yes
7	Implement or Modify Drought Rate Structure or Surcharge	Percentage	15-20%	Water Shortage Charge (35% of customer usage rates)	Yes
7	Implement or Modify Drought Rate Structure or Surcharge	Percentage	20-25%	Water Allocations in effect and enforced by Excess Use Penalty	Yes
7	Landscape - Prohibit certain types of landscape irrigation	Percentage	<0.5%	Prohibit installation or replanting of any water-using landscape	Yes
8	Expand Public Information Campaign	Percentage	15-20%	Based on community response to calls for reductions over the past 30 years	No
8	Other	Percentage	3-5%	Combined savings for actions continued from previous stages	Yes
8	Implement or Modify Drought Rate Structure or Surcharge	Percentage	15-20%	Water Shortage Charge (45% of customer usage rates)	Yes
8	Implement or Modify Drought Rate Structure or Surcharge	Percentage	20-25%	Water Allocations in effect and enforced by Excess Use Penalty	Yes
8	Landscape - Prohibit all landscape irrigation	Percentage	0-20%	Savings varies based on time of year/season	Yes

DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.

NOTES:

10632(a)(4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:
(B) Locally appropriate demand reduction actions to adequately respond to shortages.
(D) Additional, mandatory prohibitions against specific water use practices that are in addition to state-mandated prohibitions and appropriate to the local conditions.
(E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.

Submittal Table 8-3 Wholesale: Demand Reduction Actions Water Code Section 10632(a)(4)(B) and (E)				
	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Demand Reduction Actions **Drop down list** These are the only categories that will be accepted by the WUEdata online submittal tool. Select those that apply.	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range) (AF)	
Add additional rows as needed				
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.				
NOTES:				

10632(a)(4) Shortage response actions that align with the defined shortage levels and include, at a minimum, all of the following:
(B) Locally appropriate demand reduction actions to adequately respond to shortages.
(E) For each action, an estimate of the extent to which the gap between supplies and demand will be reduced by implementation of the action.

Submittal Table 10-1 Retail: Notification to Cities and Counties Water Code Section 10621(b) and 10642		
City Name	60 Day Notice **Drop Down (yes/no)**	Notice of Public Hearing **Drop Down (yes/no)**
Add additional rows as needed		
City of Cotai	Yes	Yes
City of Petaluma	Yes	Yes
City of Rohnert Park	Yes	Yes
City of Sebastopol	Yes	Yes
City of Sonoma	Yes	Yes
Town of Windsor	Yes	Yes
County Name **Drop Down List**	60 Day Notice **Drop Down (yes/no)**	Notice of Public Hearing **Drop Down (yes/no)**
Add additional rows as needed		
Sonoma County	Yes	Yes
NOTES:		

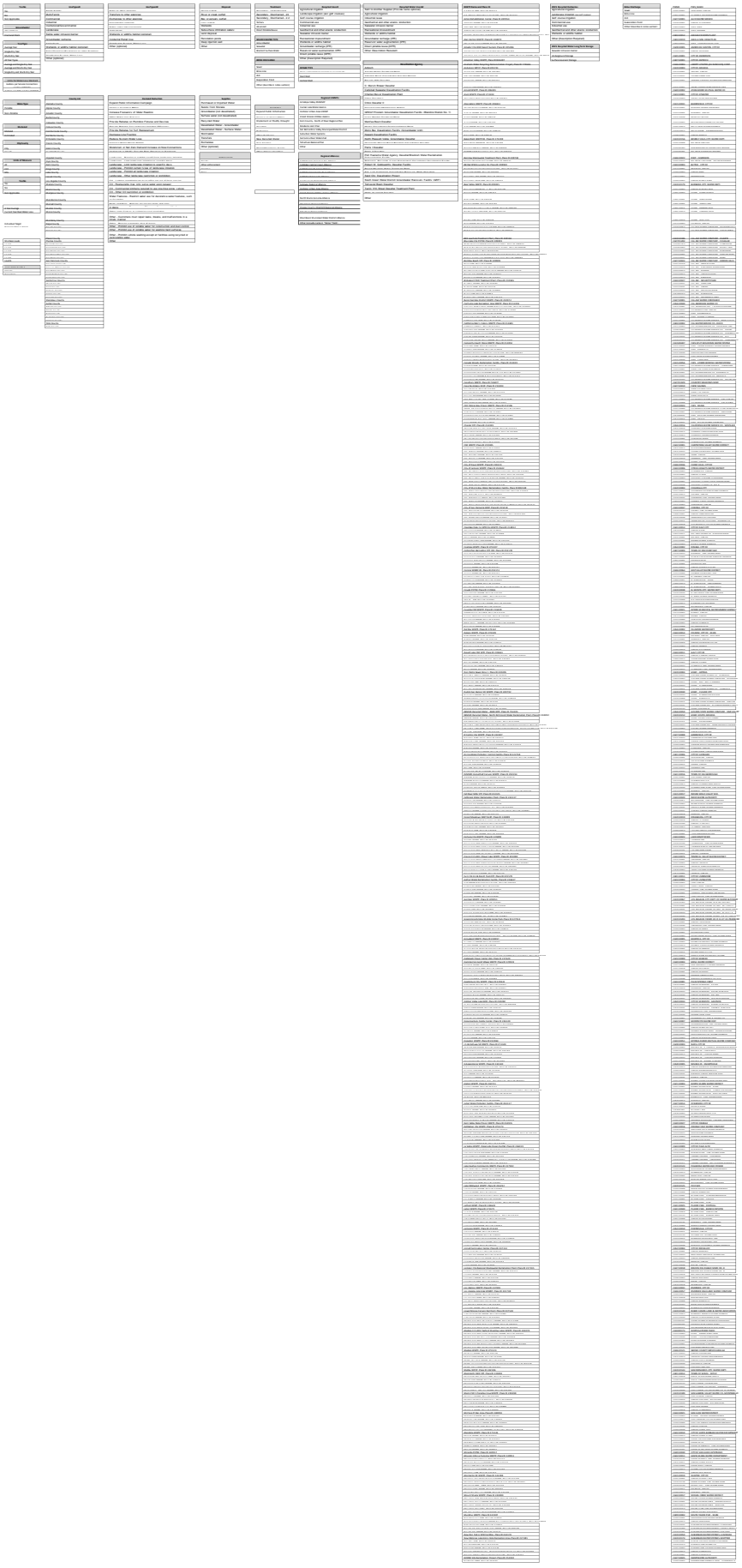
CWC 10621 (b)Notify at least 60 days prior to the public hearing any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

CWC 10642 The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.

Submittal Table 10-1 Wholesale: Notification to Cities and Counties Water Code Section 10621(b) and 10642		
☐	Check the box if the Supplier has notified more than 10 cities or counties. **Completion of the table below is not required. Provide a separate list of the cities and counties that were notified.**	
	Provide the page or location of this list in the UWMP.	
☐	Check the box if the Supplier has notified 10 or fewer cities or counties. **Complete the table below.**	
City Name	60 Day Notice **Drop Down (yes/no)**	Notice of Public Hearing **Drop Down (yes/no)**
Add additional rows as needed		
County Name **Drop Down List**	60 Day Notice **Drop Down (yes/no)**	Notice of Public Hearing **Drop Down (yes/no)**
Add additional rows as needed		
NOTES:		

CWC 10621 (b)Notify at least 60 days prior to the public hearing any city or county within which the supplier provides water that the urban water supplier will be reviewing the plan and considering amendments or changes to the plan.

CWC 10642 The water supplier is to provide the time and place of the hearing to any city or county within which the supplier provides water.



APPENDIX D: WATER DEMAND ANALYSIS

2025 WATER DEMAND ANALYSIS AND WATER CONSERVATION MEASURE UPDATE

City of Santa Rosa

19 December 2025

EKI C40180.00

EKI ENVIRONMENT & WATER, INC.

www.ekiconsult.com

2001 Junipero Serra Blvd, Suite 300 • Daly City, CA 94014

2025 WATER DEMAND ANALYSIS AND WATER CONSERVATION MEASURE UPDATE

19 December 2025

Prepared for:

City of Santa Rosa

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2025 Water Demand Analysis and Water Conservation Measure Update

City of Santa Rosa

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APPENDICES

Appendix A Methodology for Estimating Indoor and Outdoor Water Use
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Appendix C Methodology for Water Conservation Program Savings Analyses
Appendix D Prioritization and Screening of Future Water Conservation Measures

ABBREVIATIONS AND ACRONYMS

2020 Report	2020 Water Demand Analysis and Water Conservation Measure Update
AB	Assembly Bill
AFY	acre-feet per year
AWE	Alliance for Water Efficiency
BMPs	Best Management Practices
CII	Commercial, Industrial, and Institutional
City	City of Santa Rosa
CWC	California Water Code
DIM	dedicated irrigation meter
DMM	demand management measure
DWR	Department of Water Resources
FY	Fiscal Year
GPCD	gallons per capita per day
gpd/unit	gallons per day per unit
gpy	gallons per year
HECW	high-efficiency clothes washer
HET	high-efficiency toilet
LEF	landscape efficiency factors
MCCWL	Making Conservation a California Way of Life
MFR	multi-family residential
MUMs	mixed-use meters
Objective	Urban Water Use Objective
QWEL	Qualified Water Efficient Landscaper
Report	2025 Water Demand and Conservation Report
R-GPCD	residential gallons per capita per day
SB	Senate Bill
SFR	single-family residential
SMSWP	Sonoma-Marin Saving Water Partnership
State Water Board	State Water Resources Control Board
UWMP	Urban Water Management Plan
Water Contractors	The nine members of the SMWSP participating in this project

1 INTRODUCTION

To support the development of the 2025 Urban Water Management Plan (UWMP) updates, nine members of the Sonoma-Marin Saving Water Partnership (SMSWP) coordinated to conduct a joint update of their water demand projections and water conservation planning efforts (i.e., the *2025 Water Demand and Conservation Project*). The participating SMSWP members include the City of Cotati, City of Petaluma, City of Rohnert Park, City of Santa Rosa, City of Sonoma, Marin Municipal Water District, North Marin Water District, Town of Windsor, and Valley of the Moon Water District. These nine participating SMSWP members (referred to as Water Contractors herein) are shown on **Figure 1-1**.

The goals of the *2025 Water Demand and Conservation Project* are to apply a common methodology to conduct the following analysis for each Water Contractor:

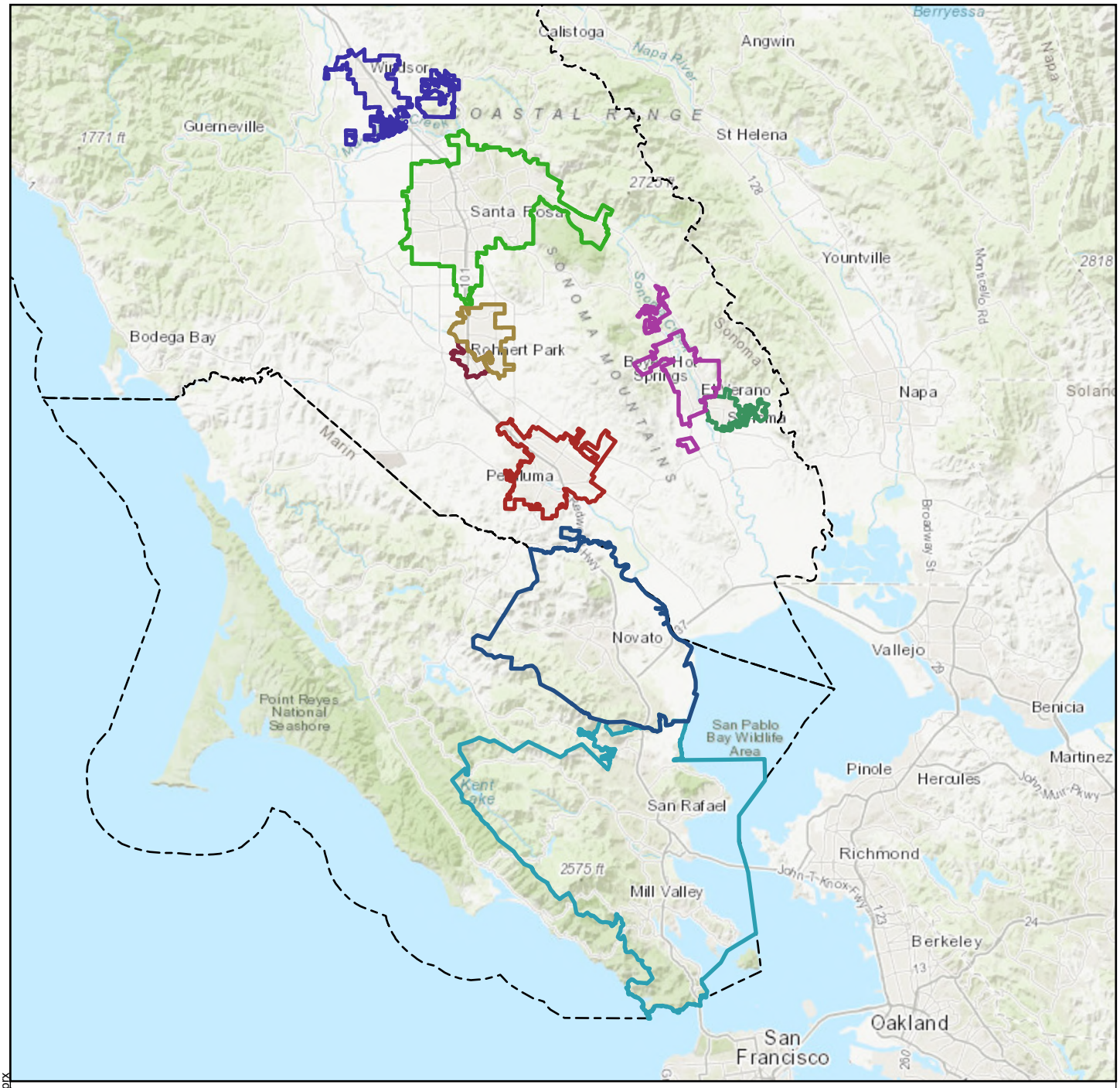
- Evaluate and document recent historical water use characteristics and trends, including population and account growth (in this report, the term "account" indicates "water connection");
- Estimate projected water demands for the years 2030 through 2050 to support both the 2025 UWMP update and coordination and planning efforts with Sonoma Water;
- Update the suite of common regional conservation measures that are being considered for implementation in the future;
- Review and document past participation in water conservation programs; and
- Estimate the potential water savings associated with future water conservation program implementation.

This 2025 Water Demand and Conservation Measure Update presents the results for the City of Santa Rosa (City), located in Sonoma County, and serving a population of approximately 174,890 people in 2024 (**Figure 1-2**). The City's water supplies include surface water purchased from Sonoma Water, local groundwater supply pumped from City wells in the Santa Rosa Plain Subbasin, and recycled water produced at the City's regional water recycling facility (Santa Rosa, 2021). Conservation has been achieved through the implementation of water conservation programs, including most administered by the City and some administered through the regional SMSWP.

This 2025 Water Demand and Conservation Report is organized as follows:

- **Section 1** identifies the goals and objectives of the Report;
- **Section 2** provides the regulatory context for the demand projections as described in the Report as well as new requirements related to *Making Conservation a California Way of Life* (Assembly Bill [AB]-1668/ Senate Bill [SB]-606) that impact the water demand and conservation planning components of the 2025 UWMPs;
- **Section 3** describes historical water use patterns and characteristics within the City;
- **Section 4** documents past participation in conservation programs and estimated savings associated with program implementation, and presents the results of a detailed analysis of program participation trends for select conservation programs;

- **Section 5** describes the projected water demands through 2050, including the assumptions and methodology used;
- **Section 6** documents the water conservation measure screening process, identifies individual programs and program scenarios for potential future implementation by the City, and presents the results of a benefit-cost analysis and an estimate of the potential water savings associated with these conservation programs;
- **Section 7** documents the key findings and conclusions from the analyses presented throughout this report; and
- **Section 8** provides key references and sources.



Legend

- City of Cotati
- City of Petaluma
- City of Rohnert Park
- City of Santa Rosa
- City of Sonoma
- Marin Municipal Water District
- North Marin Water District
- Town of Windsor
- Valley of the Moon Water District
- County Boundaries

Sources

1. Service area boundaries provided by respective agencies.
2. Basemap provided by ESRI.

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0 8 16

(Scale in Miles)

Notes

1. All locations are approximate.

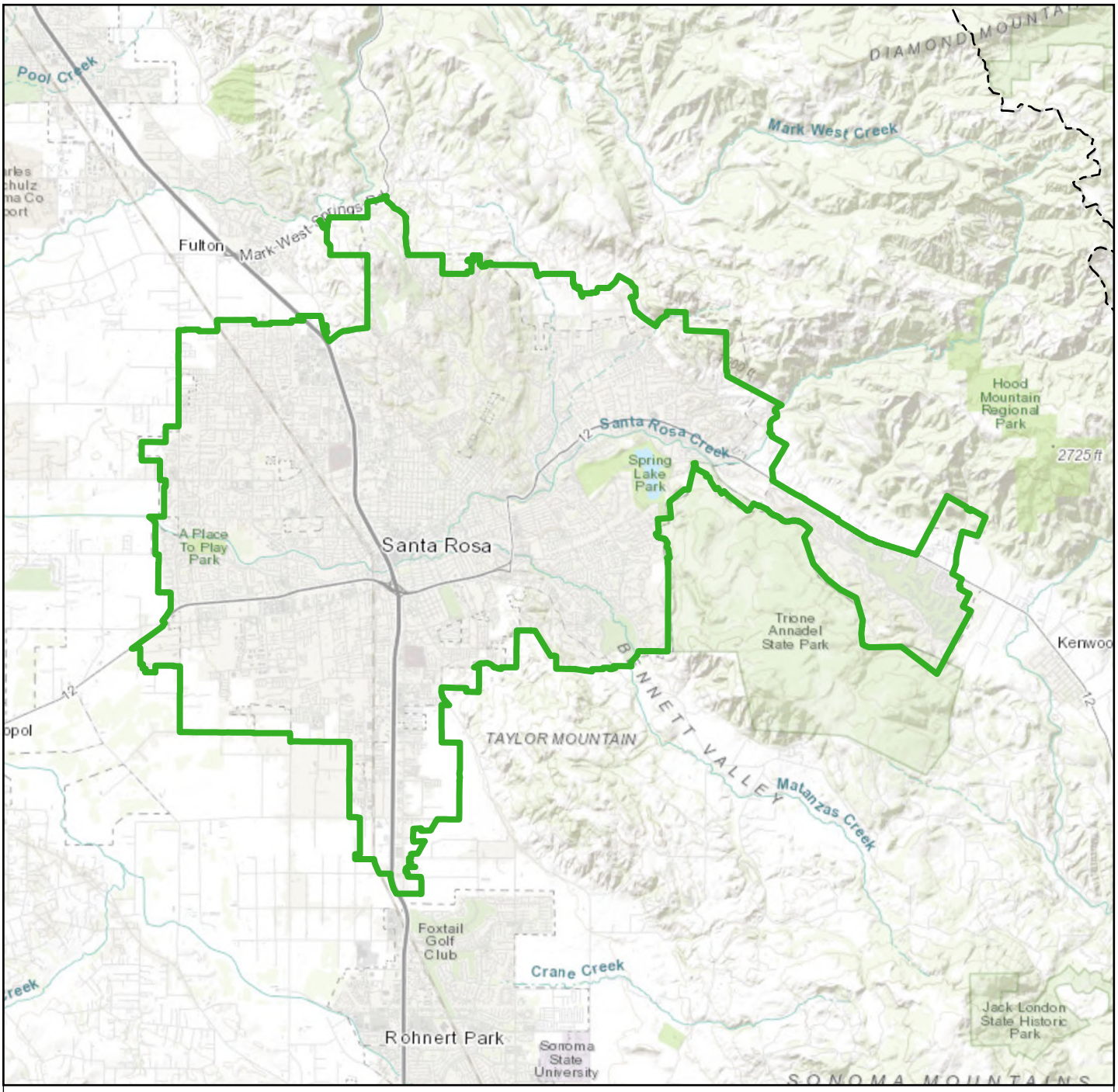
Participating Sonoma-Marin Saving Water Partnership Members

Sonoma Marin Saving Water Partnership
December 2025
C40180.00

Figure 1-1

eki environment & water

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Legend

- City of Santa Rosa Service Area
- County Boundaries

Sources

1. Service area boundary provided by City of Santa Rosa.
2. Basemap provided by ESRI.

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(Scale in Miles)

Notes

1. All locations are approximate.

Service Area Boundary – City of Santa Rosa

Sonoma Marin Saving Water Partnership
December 2025
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Figure 1-2

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2 REGULATORY CONTEXT

This section provides the regulatory background for the requirements to project future demand in the 2025 UWMP. Although there are no updates to the UWMP regulations since 2020, the *Making Conservation a California Way of Life* (MCCWL) and other state regulations will impact the 2025 UWMPs, as they will inform the water demand projections and conservation planning components.

2.1 UWMP Demand Projections Requirements

California Water Code (CWC) § 10631, excerpted below, describes the requirements to develop water demand projections that consider water use by customer sector, incorporate distribution system water loss, and account for anticipated water savings. Water demand projections herein were developed for the City using a land-use-based approach that is consistent with these requirements, and can be incorporated into the City's 2025 UWMP.

CWC § 10631

A plan shall be adopted in accordance with this chapter that shall do all of the following:

…

(d) (1) For an urban retail water supplier, quantify, to the extent records are available, past and current water use, over the same five-year increments described in subdivision (a), and projected water use, based upon information developed pursuant to subdivision (a), identifying the uses among water use sectors, including, but not necessarily limited to, all of the following:

(A) Single-family residential.

(B) Multifamily.

(C) Commercial.

(D) Industrial.

(E) Institutional and governmental.

(F) Landscape.

(G) Sales to other agencies.

(H) Saline water intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof.

(I) Agricultural.

(J) Distribution system water loss.

(2) The water use projections shall be in the same five-year increments described in subdivision (a).

…

(d)(4) (A) Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area.

(B) To the extent that an urban water supplier reports the information described in subparagraph (A), an urban water supplier shall do both of the following:

(i) Provide citations of the various codes, standards, ordinances, or transportation and land use plans utilized in making the projections.

(ii) Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.

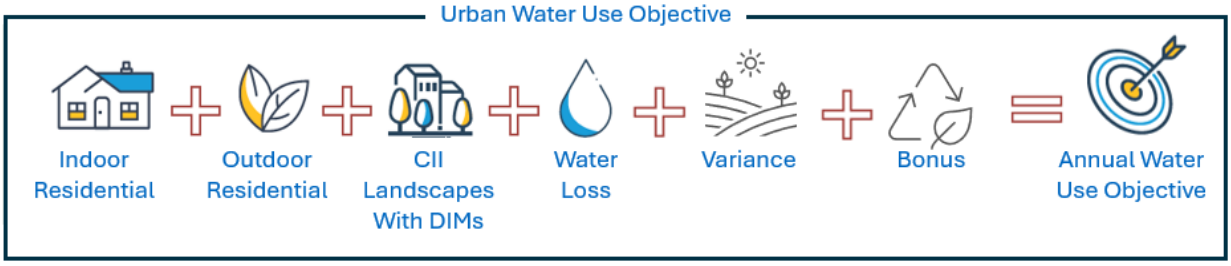
2.2 New Requirements for Water Use Efficiency

2.2.1 Making Conservation a California Way of Life

The State Water Resources Control Board (State Water Board) adopted a new Conservation Framework to implement SB 606 and AB 1668 through the enactment of the MCCWL regulation in July 2024. The Conservation Framework requires each urban water supplier to calculate and comply with an annual Urban Water Use Objective (Objective) and to implement Commercial, Industrial, and Institutional (CII) Performance Measures, both of which must be reported on annually starting January 1, 2024 (although compliance with the Objective is not required until January 1, 2027).

As illustrated on **Figure 2-1** below, the Objective is calculated as the sum of the following components: (1) residential indoor water use standard, (2) residential outdoor water use standard, (3) CII landscape outdoor water use standard (for landscapes with dedicated irrigation meters [DIMs]), (4) water loss standard, (5) allowable variances, and (6) bonus provisions. Per the latest guidelines released by the Department of Water Resources (DWR) and the State Water Board, agencies will need to assess whether they meet their overall Objective (i.e., they are not required to comply with the individual water use standards as long as they meet the overall Objective).

Figure 2-1 Components of Urban Water Use Objective



The components of the Objective water use include the following:

- **Indoor and Outdoor Residential**. The indoor and outdoor residential component includes supplier-specific water use standards for indoor and outdoor single-family and multi-family residential use. The standard for efficient residential indoor water use is expressed in gallons per capita per day (GPCD) and is currently set at 55 GPCD until January 1, 2025, when it lowers to 47 GPCD, and finally lowers to 42 GPCD beginning January 1, 2030 (**Figure 2-2**). The residential indoor water use budget is calculated by multiplying a supplier's residential service area population by the residential indoor standard and by the number of days in the year. The standard for efficient residential outdoor water use is expressed as landscape efficiency factor (LEF), a unitless number used to indicate the amount of water a supplier may need to deliver a healthy and efficient landscape in the service area and represents plant factors and irrigation efficiency (**Figure 2-2**). The

outdoor budget is then calculated by multiplying the relevant outdoor LEF by landscape area, net evapotranspiration, and a unit conversion factor of 0.62;

- **Commercial, Industrial, and Institutional (CII) Landscapes with Dedicated Irrigation Meters**. The budget for CII water use associated with DIMs are calculated by multiplying the outdoor LEF (**Figure 2-2**; 1.0 for CII special landscape area), by square footage of the landscape area, net evapotranspiration, and a unit conversion of 0.62. However, the CII landscapes with DIMs budget will not become effective until June 30, 2028; until then, the budget is equal to actual water deliveries to CII DIMs. In the future, urban retail suppliers will have the option of installing DIMs at "large landscapes" that are over 0.5 acres and currently served by mixed-use meters (MUMs) (see discussion of CII Performance Measures below);
- **Water Loss.** Water loss represents "real water losses" or physical water losses from the pressurized potable water system (water mains and customer service connections) and the utility's storage tanks, up to the point of customer consumption. These losses do not include apparent losses such as meter inaccuracies or theft. The water loss component is calculated based on the volumetric standards discussed in Section 2.2.2;
- **Variances.** Variances are an additional volume of water that an urban retail water supplier may request to add to its Objective for a unique use that has a substantial impact on a supplier's Objective. Types of variances include the following: (1) emergency response; (2) recycled water with high levels of total dissolved solids; and (3) other variances, which encompasses water use related to seasonal populations, dust control for horse corrals and animal exercise areas, irrigation of residential agricultural landscapes, water use for sustaining wildlife in ponds and lakes when required by regulation, and irrigation of existing trees. Approved variances can be included in a supplier's budget for up to five years and have documentation demonstrating that the variance does not conflict with permit requirements;
- **Bonus Incentives.** Bonus incentives apply to potable reuse projects to help suppliers meet the Objective through alternative water sources. The bonus incentive is calculated by multiplying the urban retail water supplier's potable reuse volume, in gallons, depending on where the potable reuse water is obtained (i.e., groundwater basin, reservoir, direct potable reuse [DPR] project) by the portion of total potable water production delivered to residential and landscape irrigation connections for the reporting year. Suppliers must report and update the bonus incentive calculation annually. Required documentation includes data on potable reuse volumes, loss factors for groundwater recharge and recovery, and verification from relevant regulatory authorities.

The progression of the residential indoor water use standard, residential outdoor LEF, and CII landscape with DIMs outdoor LEF is summarized on **Figure 2-2** below.

In addition, the Conservation Framework includes a number of requirements for CII Performance Measures, which include the following:

- **Implementing a classification system for CII water users**. Suppliers must classify CII accounts based on customer end use and annually maintain at least a 95% classification rate of CII end users. CII accounts are to be classified based on customer end use, in

accordance with the 18 Energy Star Portfolio Manager's broad categories (e.g., banking services, education, office, retail, utility, etc.), including four additional CII categories of laundries, landscapes with DIMs, water recreation, and car washes.

- **Converting MUMs to DIMs for CII customers with large landscapes, or employing in-lieu technologies combined with rolling out Best Management Practices (BMPs**). Suppliers must install DIMs for CII customers with large landscapes (which include those over half an acre), or employ in-lieu technology (e.g., advanced metering infrastructure) and offer BMPs to CII customers.
- **Providing BMP programs for CII customers**. Suppliers must identify CII water users that exceed a recommended size, volume of water use, or another threshold. Options include identifying the top water users, identifying the top water users within CII classification categories, or identifying inefficient CII water users with the use of key business activity indicators. For CII customers identified, suppliers must design and implement conservation plans from a list of approved BMP themes.

The implementation timeline of the MCCWL regulatory requirements is illustrated on **Figure 2-3**.

2.2.2 Related Regulations with MCCWL Compliance Implications

The following two regulations are separate from those embedded in the compliance requirements of MCCWL and are required to be reported on within annual Objective reporting:

- **Water Loss Control**. Urban water retailers are required to comply with State-assigned volumetric standards for real water loss. Suppliers must calculate system-specific water loss budgets by multiplying their State Board-assigned water loss standard by the number of days in the year and, depending on the units associated with the standard, by either the number of total service connections or the length of the distribution system. Suppliers with multiple systems must calculate an aggregate water loss budget by summing the estimated losses for each system.
- **Nonfunctional Turf Irrigation Ban (AB 1572)**. The nonfunctional turf irrigation ban applies to turf (mowed grass maintained for aesthetic purposes) that does not provide recreational or community benefits, including CII properties, and common areas of homeowner associations (HOAs). Water suppliers are required to identify what landscapes fall under the ban and implement a plan to comply by the required schedule between 2027 and 2031 depending on the property type.

Figure 2-2 Progression of Indoor and Outdoor Efficiency Standards Through 2040

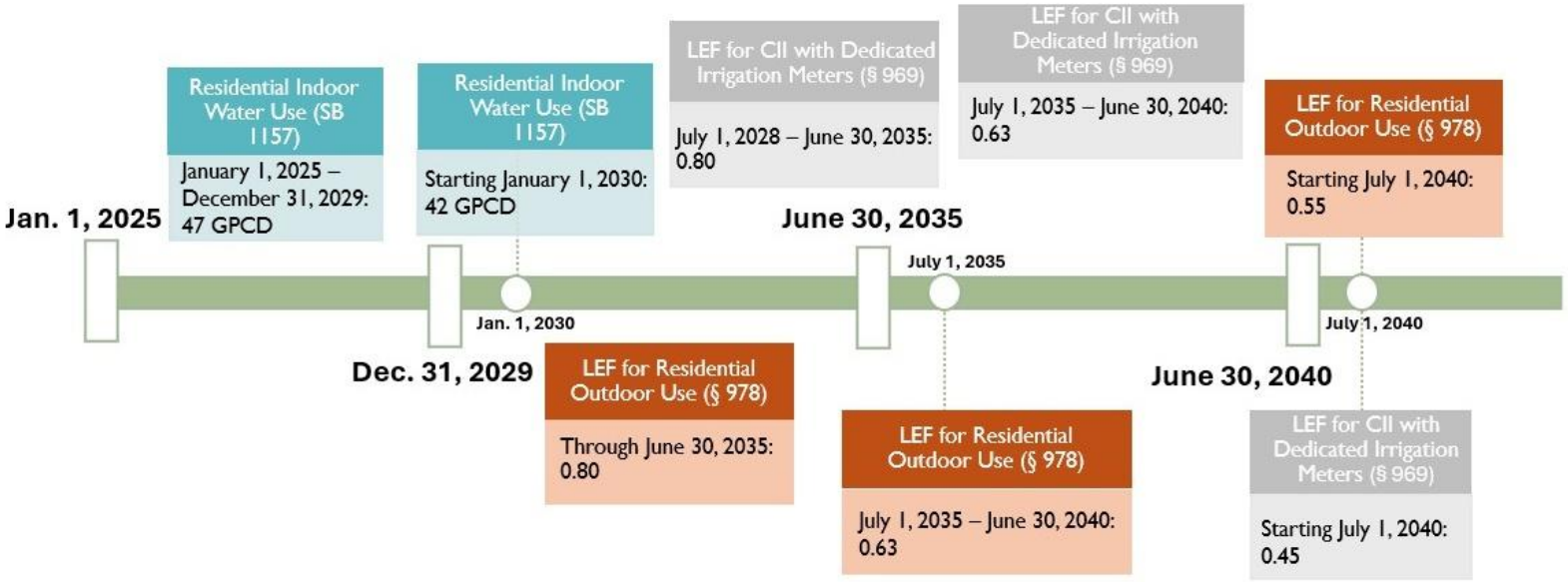
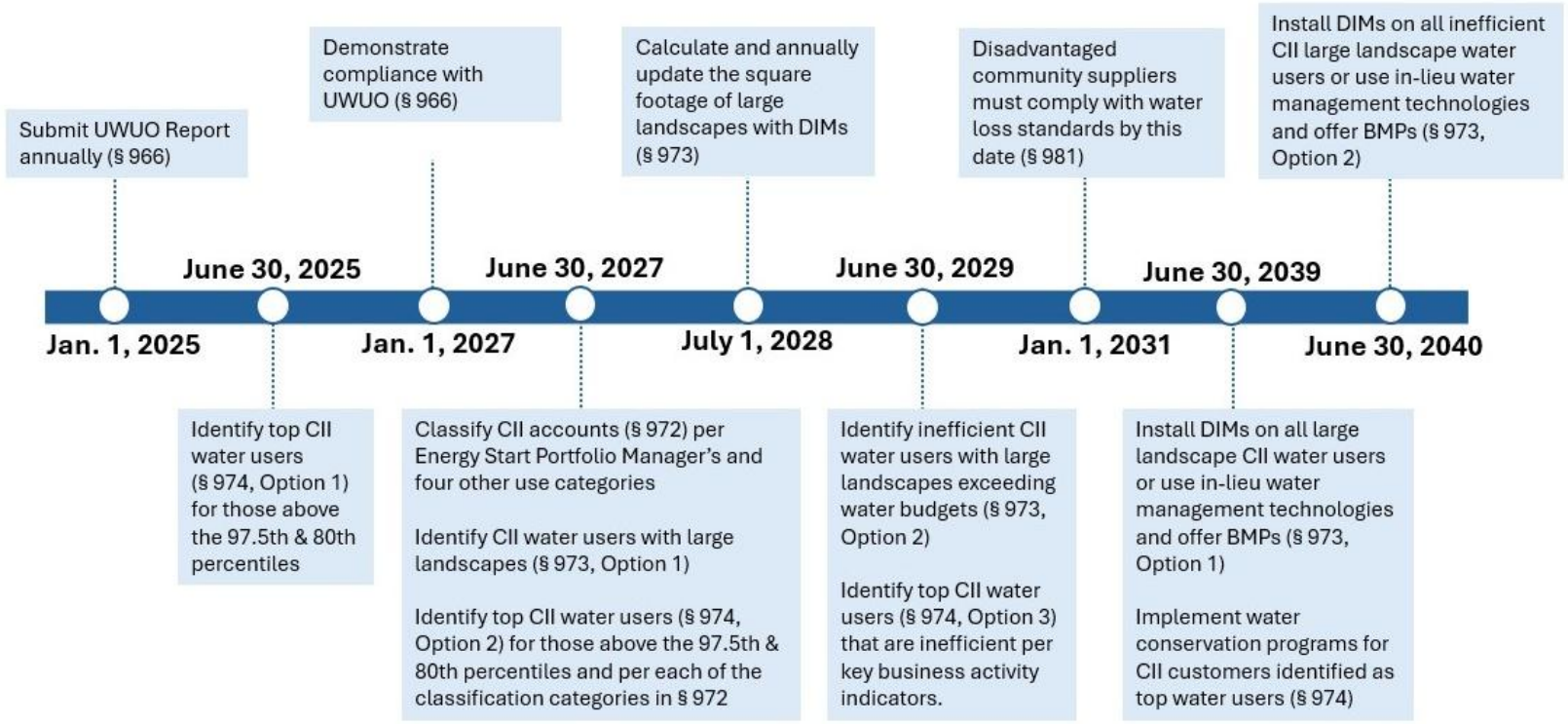


Figure 2-3 General Timeline of MCCWL Regulatory Requirements



3 WATER USE CHARACTERISTICS

This section describes historical water use by customers within the City including changes in observed water use, changes in average water use per account over time, and estimates of indoor and outdoor water use. This information is used to provide context and background to support the projection of future water demands and estimates of potential conservation program benefits. The terms "water use," "water consumption," and "water demand" are used interchangeably in this document.

3.1 Historical Total and Per Capita Water Use

Table 3-1 and **Figure 3-1** shows the City's annual potable water use, annual recycled water use, total per capita water use inclusive of both potable and recycled water[1], and residential per capita water use for the past 15 years, 2010 through 2024. As shown in **Table 3-1** and on **Figure 3-1**, total water use (including potable and recycled water) rose steadily from 2010 to 2013 to a high of 21,960 acre-feet before declining significantly in 2014 in response to the historic 2014-2017 drought and the State's water use reduction mandates. From 2015 to 2019, water use remained relatively stable between approximately 16,600 and 18,000 AFY, despite continued population growth. Water use rose in 2020 to 19,387 AFY at the beginning of the pandemic and then declined again, coinciding with the 2021-2023 drought and drought response efforts. While there was a modest increase following the drought in 2024 to 17,284 AFY, total water use remains below historical levels observed in the 2010s.

Total per capita water use (including both potable and recycled water use) has declined over the period, from a high of 114 GPCD in 2013 to lows of 83 and 84 GPCD in 2022 and 2023, respectively, except for a high year of 97 GPCD in 2020. A similar trend was observed in residential per capita water use. These trends reflect the impact of water efficiency improvements, as well as demand hardening as structural and behavioral changes during droughts result in lasting water use reductions.

Historical water consumption per customer sector is provided in **Table 3-2** and shown on **Figure** 3-2. **Figure 3-3** shows the proportional water use by sector in 2024. The single family residential (SFR) sector comprises the largest proportion of the City's total water consumption (52%). By comparison, the proportional water use consumption for the other sectors includes multi-family residential (MFR) sector at 21%; the combined CII sector at 17%; dedicated irrigation accounts at 9.7%; with recycled and other water use collectively comprised of 0.5% of total water consumption. Separately, non-revenue water was estimated to be 5.3% of the City's total water demand (**Table 3-2**).

[1] Per capita water use for purposes of comparing water use to SB X7-7 water conservation targets may be different, due to the prescriptive method by DWR for determining an agencies compliance population and total water use. SB X7-7 compliance will be separately addressed by the City's UWMP.

Table 3-1 Total and Per-Capita Water Use

Year	Potable Water Use (a) (AFY)	Recycled Water Use (a) (AFY)	Total Water Use (AFY) (b)	Total Per Capita Water Use (c) (GPCD)	Residential Per Capita Water Use (d) (R-GPCD)
2010	19,428	(e)	19,428	104	70
2011	18,439	98	18,536	98	69
2012	20,145	145	20,290	107	73
2013	21,823	137	21,960	114	75
2014	18,042	139	18,181	94	62
2015	16,539	141	16,680	85	57
2016	16,938	133	17,071	87	57
2017	17,894	151	18,046	91	61
2018	17,689	146	17,835	90	58
2019	17,832	145	17,977	92	60
2020	19,277	110	19,387	97	66
2021	17,165	117	17,282	87	57
2022	16,237	97	16,334	83	56
2023	16,293	112	16,405	84	57
2024	17,196	89	17,284	88	61

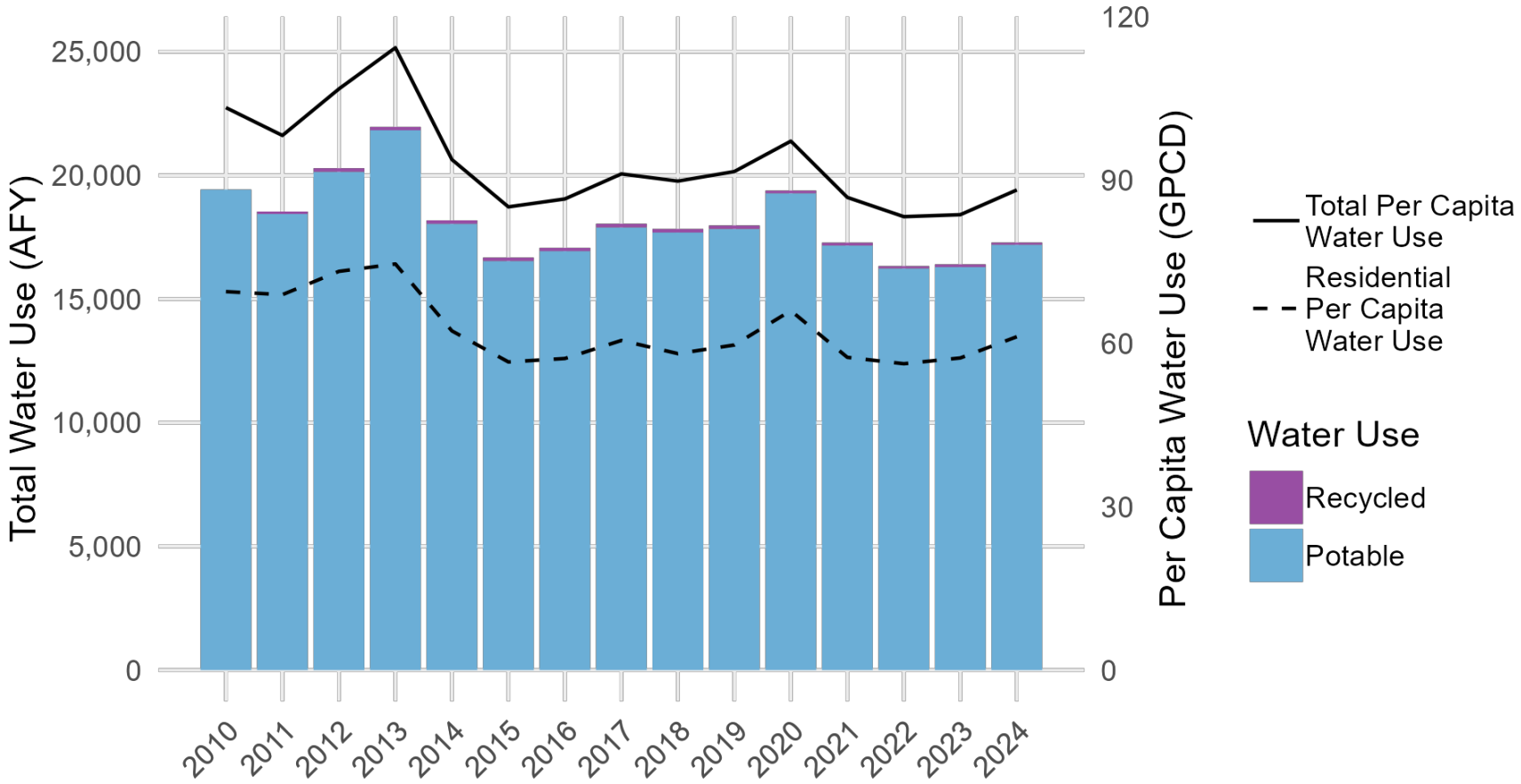
Abbreviations:

AFY = acre-feet per year
GPCD = gallons per capita per day
R-GPCD = residential gallons per capita per day

Notes:

(a) Water use data are based on water production data provided by City staff. Recycled water use includes only urban irrigation uses. Numbers may be rounded.
(b) Totals may not sum due to rounding.
(c) Total per capita water use is calculated by dividing the annual water use by service area population (see Section 4) and the number of days in a year.
(d) Residential per-capita water use is calculated by dividing the annual residential water use by service area population and the number of days in a year.
(e) Recycled water use in 2010 was significantly higher than in other years and has been excluded from the analysis presented herein due to its anomalous nature. Santa Rosa's urban reuse system customers came online in 2010. Since then, ongoing monitoring and inspections by City staff have enabled users to identify and respond to high use, system breaks, and leaks. These efforts have supported more efficient irrigation practices across the system.

Figure 3-1 Total Water Production and Per Capita Water Use



Abbreviations:

AFY = acre-feet per year

GPCD = gallons per capita per day

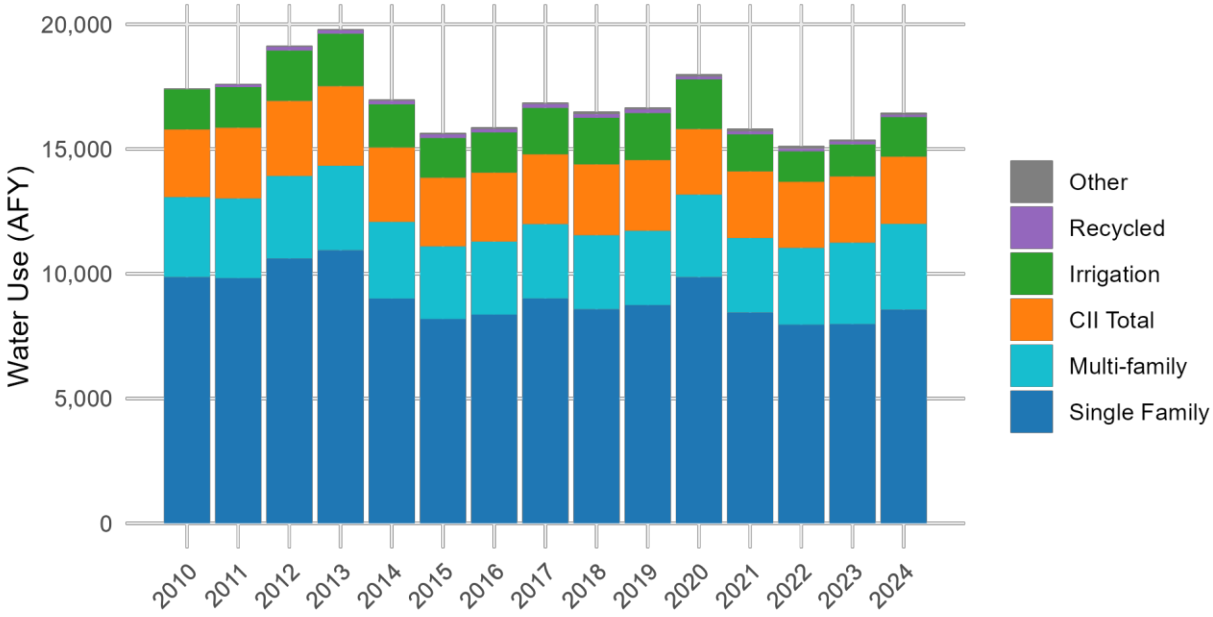
Table 3-2 Annual Water Use by Customer Sector

Water Use Sector	Water Use (a) (AFY)														
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Single Family	9,865	9,826	10,613	10,940	9,006	8,186	8,365	9,008	8,578	8,745	9,863	8,449	7,958	7,983	8,562
Multi-Family	3,208	3,191	3,308	3,390	3,073	2,910	2,924	2,979	2,966	2,978	3,309	2,984	3,078	3,261	3,438
Commercial	2,137	2,277	2,386	2,500	2,340	2,161	2,142	2,191	2,193	2,165	2,020	2,078	2,046	2,035	2,056
Industrial	220	223	234	285	268	251	283	262	309	299	304	320	307	328	326
Institutional	357	341	392	407	376	346	342	348	341	372	308	276	300	297	313
Irrigation	1,611	1,627	2,018	2,104	1,729	1,593	1,609	1,863	1,868	1,887	1,991	1,482	1,224	1,286	1,590
Other (b)	31	26	45	37	50	59	75	58	102	72	93	109	114	71	81
Recycled (c)	(d)	98	145	137	139	141	133	151	146	145	110	117	97	112	89
Total Water Consumption	**17,398**	**17,583**	**19,095**	**19,765**	**16,934**	**15,590**	**15,800**	**16,804**	**16,402**	**16,592**	**17,906**	**15,708**	**15,010**	**15,304**	**16,377**
Non-Revenue Water (e)	2,030	954	1,194	2,196	1,247	1,090	1,271	1,241	1,433	1,385	1,481	1,574	1,324	1,101	908
	10.4%	5.1%	5.9%	10.0%	6.9%	6.5%	7.4%	6.9%	8.0%	7.7%	7.6%	9.1%	8.1%	6.7%	5.3%
Total Water Demand (f)	**19,428**	**18,536**	**20,290**	**21,960**	**18,181**	**16,680**	**17,071**	**18,046**	**17,835**	**17,977**	**19,387**	**17,282**	**16,334**	**16,405**	**17,284**

Abbreviations:
AFY = acre-feet per year

Notes:
(a) Water use data are based on water production data provided by City staff.
(b) Water use in the "Other" sector includes use from firelines, construction, and yard meters. Yard meters record a combination of potable and recycled water use, where recycled water makes up approximately 4% of total use. Annual water use records from yard meters are reduced by 4% to estimate the approximate potable water use.
(c) Recycled water use includes only urban landscape irrigation uses (no agricultural uses).
(d) Recycled water use in 2010 was significantly higher than in other years and has been excluded from the analysis presented herein due to its anomalous nature.
(e) Non-revenue water is calculated as the difference between total production and total consumption.
(f) Totals may not sum due to rounding.

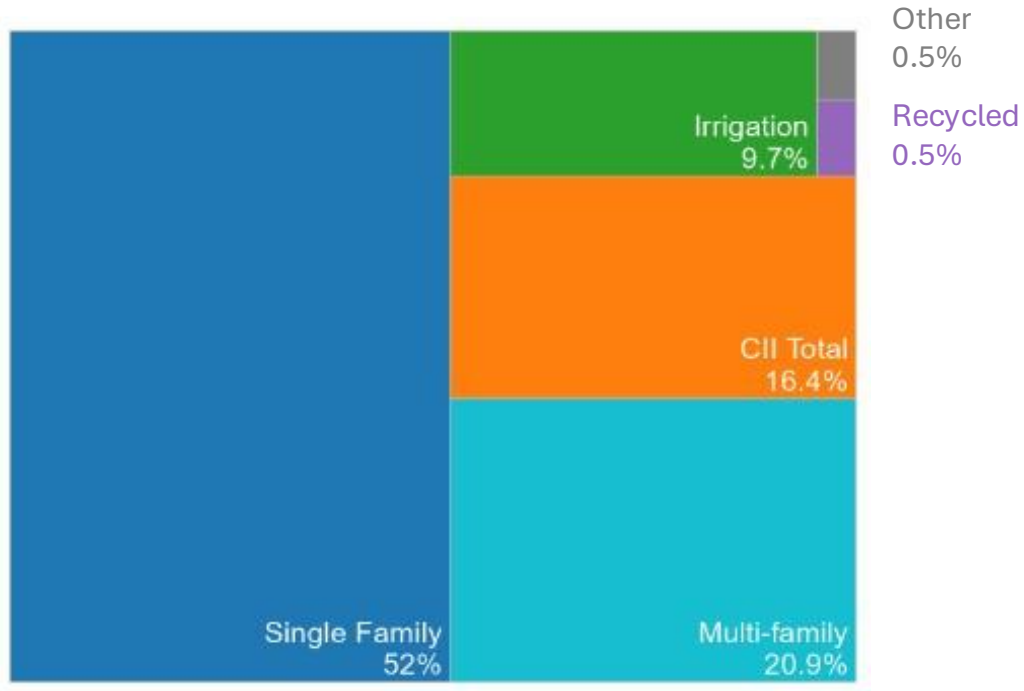
Figure 3-2 Annual Water Use by Customer Sector



Abbreviations:

AFY = acre-feet per year
CII = commercial, industrial, and institutional

Figure 3-3 Proportional Water Use by Customer Sector in 2024



Abbreviations:

CII = commercial, industrial, and institutional

3.2 Water Use Trends by Customer Sector

This section discusses long-term trends in both total water use and per-account water use across customer sectors from 2010 to 2024. **Figure 3-4** shows monthly water use with 12-month moving averages. **Figure 3-5** summarizes annual water use per account. And **Table 3-3** provides water use per customer sector. In total, these results provide insight into how each sector has responded to drought conditions, economic changes, and shifts in demographics.

- **SFR and MFR**: Total water use in the SFR sector has slightly declined between 2010 and 2024, whereas total water use in the MFR sector has slightly increased. Within both sectors, there are notable peaks during 2013 and 2020, reductions during drought periods, and partial rebounds after the droughts. The reductions during the 2014-2017 and 2021-2023 drought periods are accompanied by diminished seasonality (**Figure 3-4**) that reflects likely reductions in outdoor irrigation in response to water use restrictions.

  The average per-account water use was highest in 2013 and rose again in 2020 during the COVID-19 pandemic. Per-account use has begun to rebound in 2023-2024, and current levels are comparable to those seen in 2017-2019.

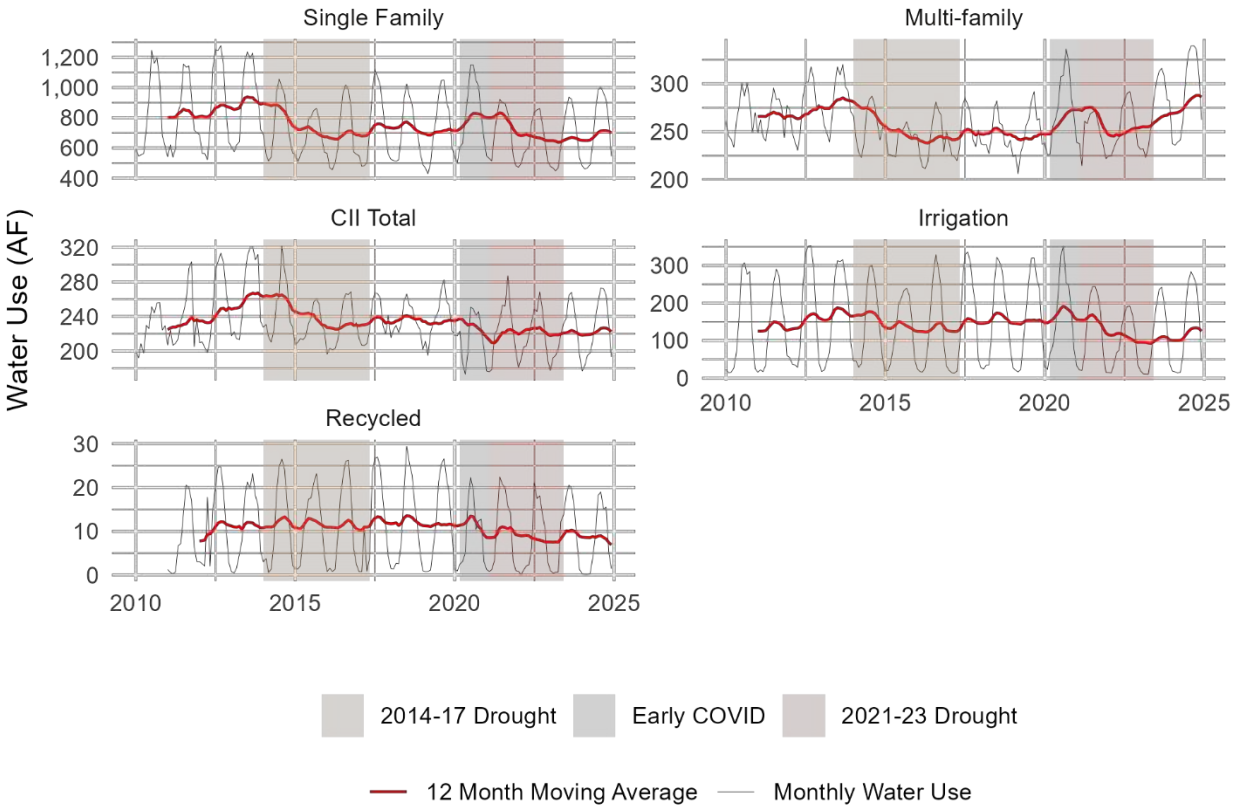
- **CII Total**: The CII sectors exhibited significant declines in both total and per account use in response to the 2014-2017 drought and COVID. These shifts may be tied to long-term changes in business activity and employment in the City, with reduced water demand persisting through 2024.

- **Irrigation**: The irrigation sector showed reductions during drought years, with a steeper decline during 2020-2022. Per account water use shows signs of a partial rebound in 2023-2024 but remains lower than in 2017-2019. Generally, there was a stronger rebound in the irrigation sector compared to others.

- **Other**: Per account water use for accounts in the Other category show an overall increasing trend between 2010 and 2024 with short-term fluctuations.

- **Recycled water**: Recycled water use has remained relatively steady in total volume over time, although water use has fluctuated slightly. Recycled water use peaked in 2018 and reached a low in 2024. These trends reflect seasonal irrigation patterns, changes in site operations, and ongoing monitoring and oversight by City staff to support efficient system performance.

Figure 3-4 Monthly Water Use and 12-Month Moving Average



Notes:

Monthly water use was not available for accounts in the "Other" sector, which includes firelines, construction, and yard meters.

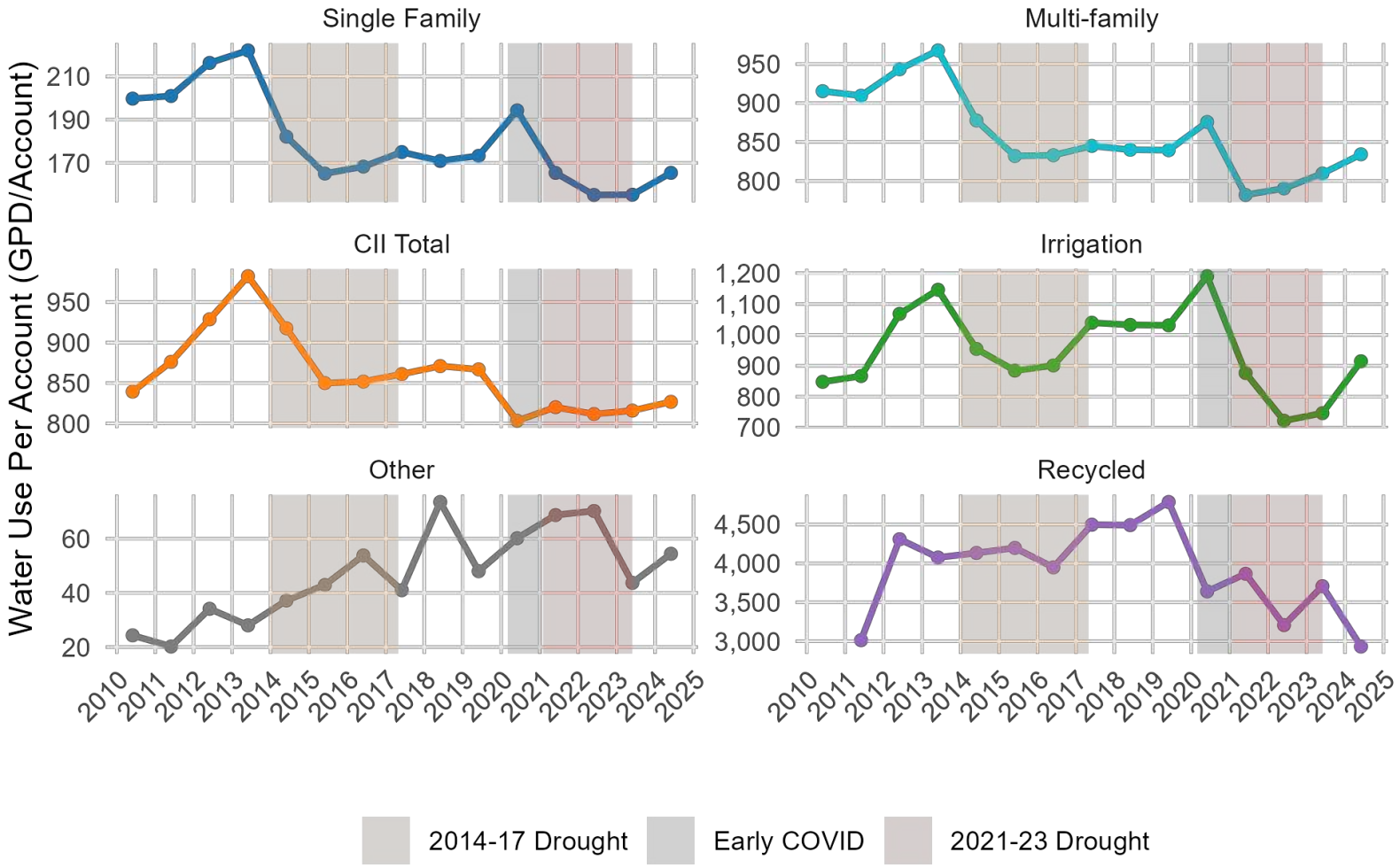
Table 3-3 Average Per-Account Water Use by Customer Sector

Water Use Sector	Water Use per Account (GPD/Account)														
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Single Family Residential	200	201	216	222	182	165	168	175	171	173	194	165	155	155	165
Multi-Family Residential (a)	915	909	943	968	878	832	833	845	840	839	876	782	790	809	834
CII Total (b)	839	876	929	982	918	850	852	861	871	867	803	820	812	816	827
Irrigation	848	867	1,068	1,146	955	885	901	1,039	1,032	1,031	1,190	877	723	747	915
Other (c)	24	20	34	28	37	43	54	41	74	48	60	69	70	44	54
Recycled Water (d)	(e)	3,014	4,311	4,076	4,135	4,199	3,949	4,497	4,492	4,789	3,640	3,867	3,208	3,707	2,933

Abbreviations:
GPD = gallons per day

Notes:
(a) The water use per account for multi-family residential customers measures water use at the master meter level, which can serve multiple units or the entire complex. This does not reflect water use per dwelling unit, as many properties are not individually submetered.
(b) Based on the total water use and number of accounts across all CII sectors.
(c) "Other" accounts include firelines, construction, and yard meters.
(d) Recycled water use includes only urban landscape irrigation uses (no agricultural uses).
(e) Recycled water use in 2010 was significantly higher than in other years and has been excluded from the analysis presented herein due to its anomalous nature.

Figure 3-5 Average Per-Account Water Use by Customer Sector



Abbreviations:

CII = commercial, industrial, and institutional

3.3 Estimated Indoor and Outdoor Water Use

Water use within the City varies seasonally, primarily driven by increased irrigation needs in the summer compared to the more limited irrigation water use during the wetter and cooler winter months. The most pronounced seasonal fluctuations occur in the dedicated irrigation and recycled water sectors, which record water use from dedicated irrigation meters of MFR and CII customers and where water use is limited to outdoor irrigation. In these sectors, water use is minimal during the winter.

In contrast, SFR, MFR, and the combined CII sectors of mixed-use meters record both indoor and outdoor water demand. In the SFR sector, summer water use is double that of winter water use. The MFR and CII sectors, which usually have separate dedicated irrigation meters, show less seasonality, with summer water use about 28% and 37% higher than winter water use, respectively.

It is important to note that many MFR and CII customers have dedicated irrigation meters that are included in the irrigation sector, not within the MFR and CII mixed-use sectors. Some MFR and CII accounts are mixed-use intentionally and others of these accounts simply use their domestic meter for irrigation inadvertently. As a result, the outdoor water use estimated for MFR and CII sectors in this section (Section 3.3) reflects only the portion of irrigation that remains on the domestic or mixed-use accounts. Some CII industries, such as restaurants, manufacturing, or facilities with cooling needs, may also experience seasonal variation in indoor water use, contributing to the modest increase in CII summer demands.

A Seasonal Adjustment Method is used to estimate the relative proportions of water use that are used indoors versus outdoors in non-irrigation sectors. The methodology is further described in Appendix A. The results of this estimate are shown on **Figure 3-8** for 2024 and on **Figure 3-7** for 2017 through 2024, which includes periods before and after the recent drought.

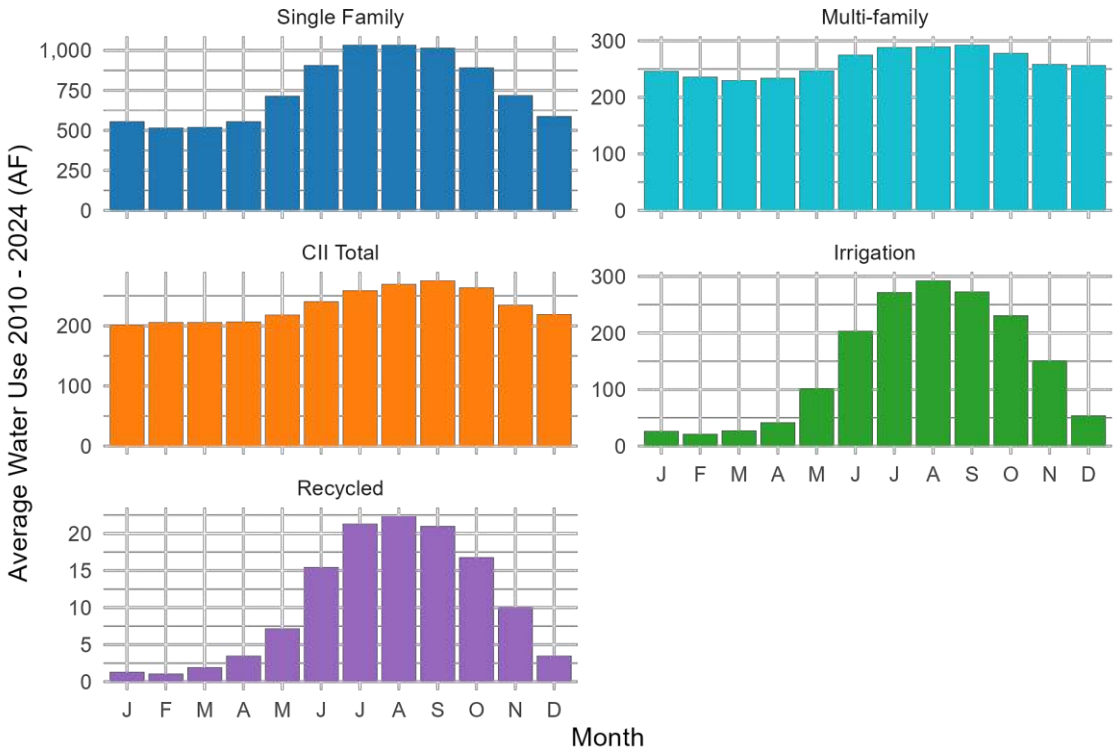
Outdoor water use has varied across customer sectors over the past eight years, with the single-family sector having the highest proportion of outdoor use. SFR outdoor use has fluctuated between 31% and 46% of total SFR water use, peaking in 2019-2020. Outdoor water use in MFR mixed-use meters has remained much lower, typically in the 15-20% range, with a notable low in 2018 (6%) followed by stabilization in recent years[2]. Outdoor water use in CII mixed use meters has been more volatile, ranging from 2% to 24%, with an anomalous drop in 2020 and higher levels since 2021. Across all sectors with mixed use meters, outdoor use generally remained in the mid-20% to low-30%, reflecting overall reductions in 2021 and steady recovery in the years that followed.

A closer look at 2024 conditions shows that, aside from the dedicated irrigation and recycled sectors (100% outdoor use), SFR water use had the highest proportion of outdoor use at 39%, followed by the CII sector of mixed-use meters at 23%, and the MFR sector of mixed-use meters at 20%. The lower outdoor percentage for the MFR sector corresponds to the lesser seasonality

[2] Only mixed-use meters under MFR accounts are accounted for in this analysis. Therefore, the outdoor percentages are likely an underestimate of total MFR outdoor water use. Outdoor water use recorded on MFR dedicated irrigation meters typically represents an additional 7% of total MFR water use.

observed in this sector. These values should be interpreted with the understanding that a substantial portion of MFR and CII landscape irrigation is already captured in the irrigation sector through dedicated irrigation meters. Given their landscape-only demands, MFR and CII dedicated irrigation accounts represent meaningful opportunities for outdoor conservation programs.

Figure 3-6 Average Monthly Water Use, 2010-2024



Abbreviations:

AFY = acre-feet

CII = commercial, industrial, and institutional

Figure 3-7 Indoor and Outdoor Water Use Percentages by Sector, 2017-2024

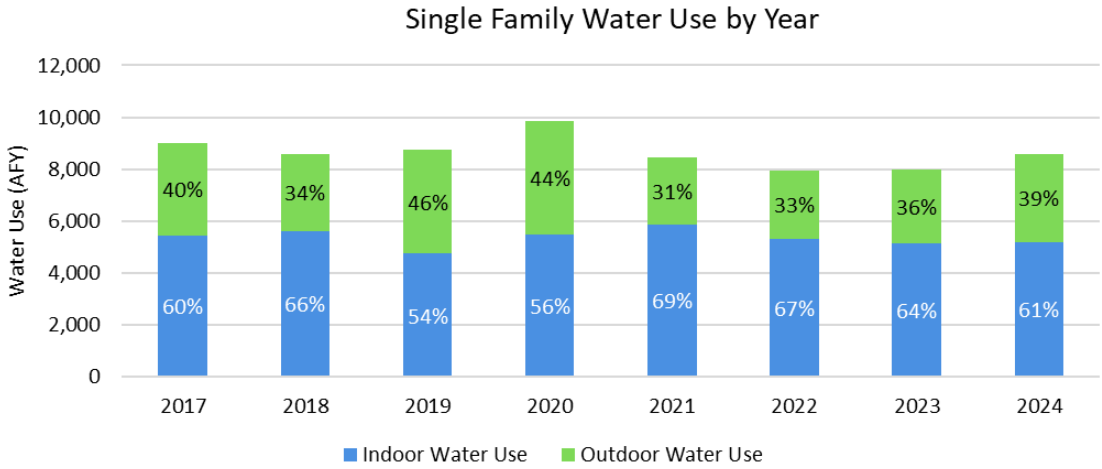
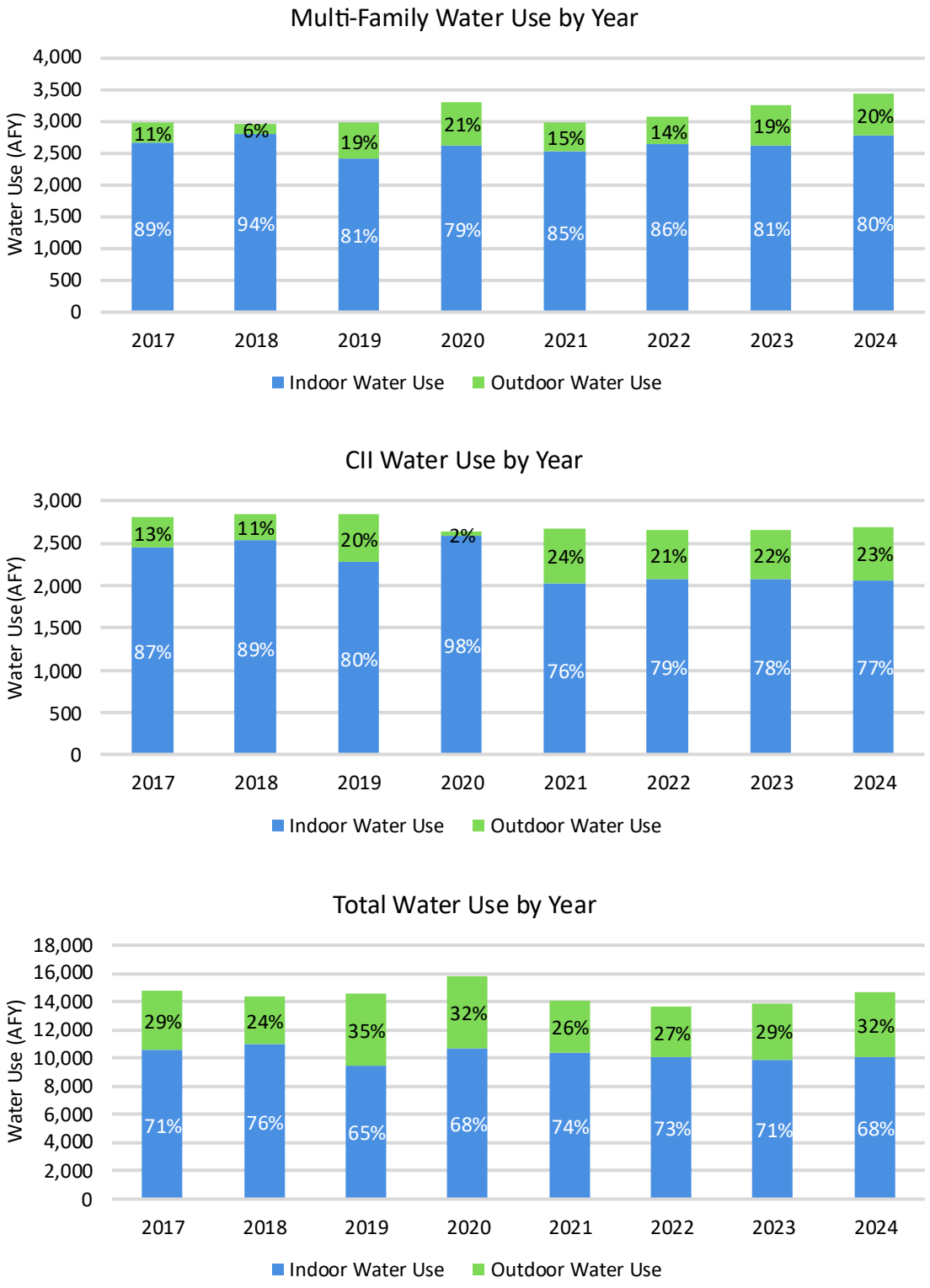


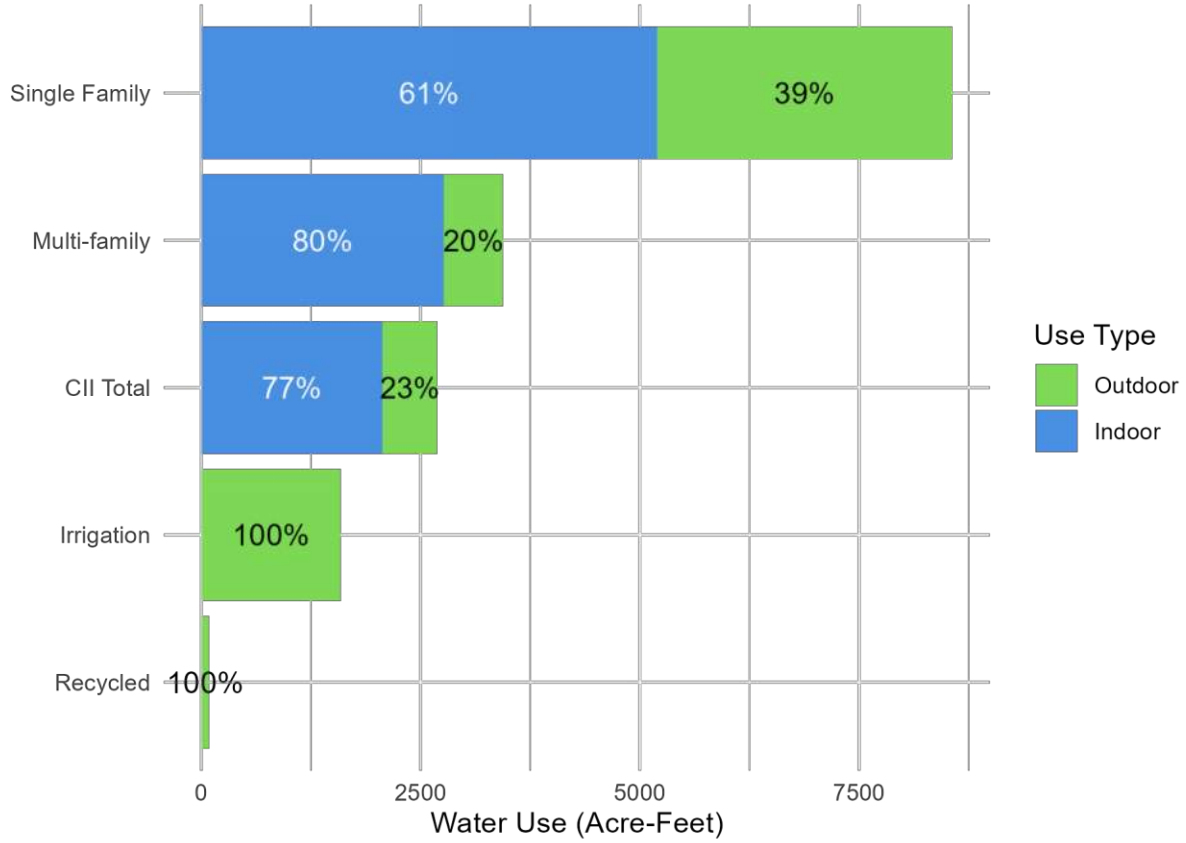
Figure 3-7 Indoor and Outdoor Water Use Percentages by Sector, 2017-2024 (Continued)



Abbreviations:

CII = commercial, industrial, and institutional

Figure 3-8 Estimated Indoor and Outdoor Water Use, 2024



Abbreviations:

CII = commercial, industrial, and institutional

3.4 Distribution of Residential Water Use

To further understand water use patterns within the residential sector, a statistical analysis of the most current (2024) water use data was performed. This analysis informed the development of the spatial distribution map in Section 3.4 and provides insights on the water savings potential by residential customers. **Figure 3-9** and **Table 3-4** show the distribution of estimated indoor and outdoor water use and the median water use value. Further observations are described below:

- The median indoor water use for SFR customers is estimated to be 62 gallons per day per unit (gpd/unit), and the average is estimated to be 83 gpd/unit. The average is significantly higher than the median because the average value is sensitive to customers with exceptionally high-water use. Thus, the median is a better representation of the overall water use patterns within the City's service area (i.e., half of the customers are estimated to have a lower indoor water use than 62 gpd/unit).
- The median indoor water use for MFR customers (64 gpd/unit) is almost identical to that of SFR customers, although the 25th percentile indoor use for SFR customers (33 gpd/unit) is somewhat lower than that of MFR customers (42 gpd/unit). This suggests that some single-family households may be achieving very low indoor water use levels, potentially reflecting smaller household sizes or highly efficient fixtures. Nevertheless, the overall

similarity in median values between customer classes indicates a common typical range of indoor use, suggesting that remaining indoor conservation potential may be limited.

- For MFR customers, the median indoor water use was 64 gpd/unit, while the average is estimated at 74 gpd/unit. The relatively close alignment of the median and average values indicates less variability in indoor water use compared to SFR customers and limited indoor conservation potential for MFR customers.
- The median outdoor water use of SFR customers is estimated to be 58 gpd/unit, while the average is slightly higher at 82 gpd/unit. The relatively broad distribution of outdoor water use (with a 75th percentile of 113 gpd/unit and a standard deviation of 74 gpd/unit) indicates substantial variability in irrigable landscape areas and irrigation practices among SFR customers. These data suggest that water conservation programs that target outdoor water use, particularly for higher-using customers, could provide significant water savings.
- MFR accounts typically serve shared irrigated areas across multiple units; as of 2024, the average MFR account serves 6.9 units. On a per-unit basis[3], the median MFR outdoor water use is 24 gpd/unit, with an average of 39 gpd/unit. On a per-account basis, the median outdoor use for MFR customers is 30 gpd/account and the average use is 80 gpd/account. The fact that per-account outdoor use does not scale proportionally with the number of units served suggests diminishing marginal increases in the total irrigated area or more efficient irrigation practices at larger MFR properties. While overall outdoor use among MFR customers is lower, larger MFR accounts remain good candidates for outdoor-focused conservation programs. The potential for outdoor water savings in the general MFR sector is likely comparable to that of the SFR sector on a per-account basis.

[3] Multi-family dedicated irrigation accounts are included in this analysis and directly added as outdoor water use.

Figure 3-9 Distribution of Residential Indoor and Outdoor Water Use in 2024

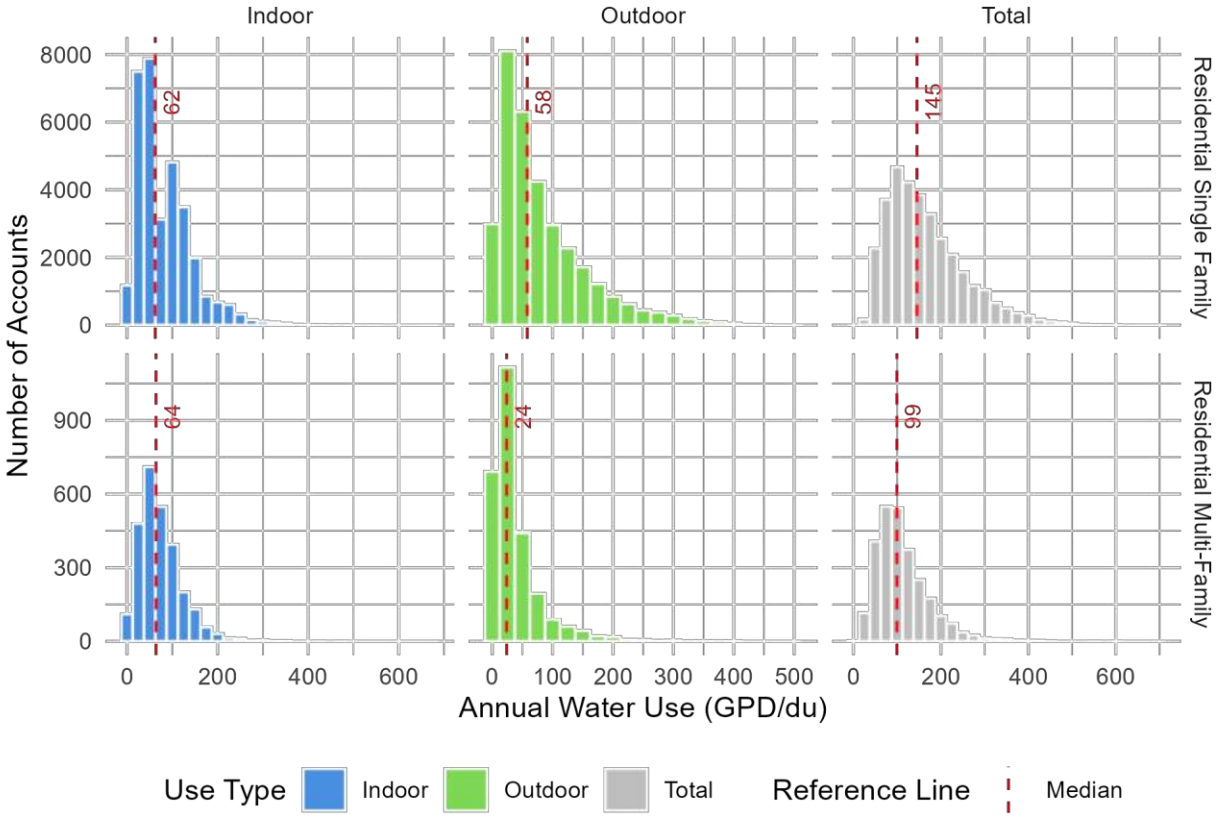


Table 3-4 Summary of Distribution of Residential Indoor and Outdoor Water Use in 2024

Statistical Summary	Estimated Indoor Water Use (gpd/unit)	Estimated Outdoor Water Use (gpd/unit)	Total Water Use (gpd/unit)
SFR (a)			
25th Percentile	33	29	99
Median	62	58	145
75th Percentile	115	113	211
Average	83	82	165
Standard Deviation	61	74	89
MFR (a)(b)(c)			
25th Percentile	42	12	70
Median	64	24	99
75th Percentile	97	48	141
Average	74	39	113
Standard Deviation	49	45	63

Abbreviations:
MFR = multi-family residential
gpd/unit = gallons per day per unit
SFR = single family residential

Notes:
(a) The table shows statistical summaries of customer billing data by excluding outliers (i.e., water usage in the highest one percent) and customers that were inactive in any month. Since outliers affect averages and standard deviations but not the 25th percentile, the median, and the 75th percentile, the median is a better representation of the overall water use patterns of the City's customers.
(b) Includes both regular and irrigation meters within the duplex and multi-family account types.
(c) Water use for each MFR account was normalized by the number of units presented in the customer-level billing data. If the number of units was not available, a unit of 1 was assumed.

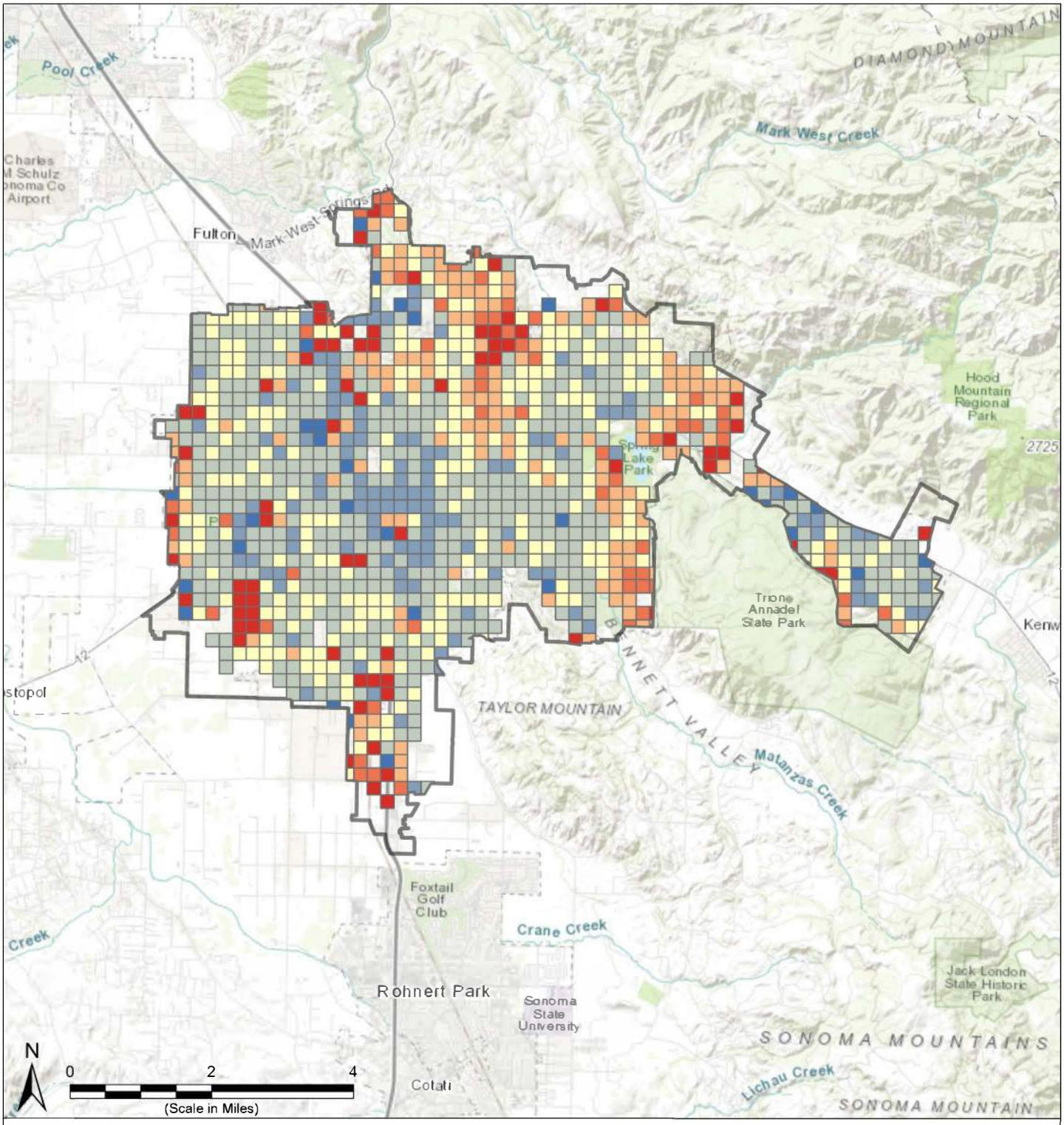
3.5 Spatial Distribution of Residential Water Use Across the City Service Area

Figure 3-10 shows spatial distribution of the total residential water use by residential customers (i.e., SFR and MFR customers). The median water use is presented by both grid cells to show the general water use characteristics in different portions of the City. Most customers with high total water use are located in the north and northeastern portions of the City (i.e., in the near the hillside suburban areas) and near the southern boundary of the City. Most customers with the lowest total water use are located near the central City and downtown area.

3.6 Estimated Residential Per Capita Indoor Water Use

Table 3-5 shows the calculations to estimate the indoor residential gallons per capita per day (R-GPCD) from 2017 to 2024 within the City's service area. **Figure** 3-11 further illustrates the estimated indoor R-GPCD.

Table 3-5 and **Figure** 3-11 show that the City's indoor GPCD was relatively steady over this period, ranging between 40 and 42 GPCD except for a temporal low in 2019. The City's current estimated indoor R-GPCD is lower than the UWUO residential indoor water use standard through 2040 (42 GPCD) as described in Section 2.2.1.



Legend

- Santa Rosa Boundary

Total Water Use (gal/day/unit)

- 0 - 70
- 70 - 100
- 100 - 150
- 150 - 200
- 200 - 300
- 300 - 400
- > 500

Notes

1. All locations are approximate.
2. For purposes of visualizing and presenting these data, total water use is presented as the median water use of all residential customers with valid AMI data located within a grid cell and reported in gpd per unit. Grid size is 1,000 ft X 1,000 ft.

Abbreviations

gal = gallon
gpd = gallons per day

Sources

1. Basemap is ESRI's ArcGIS Online world topographic map, obtained 12 August 2025.

Spatial Distribution of Residential Total Water Use

Sonoma-Marin Saving Water Partnership
Santa Rosa, CA
December 2025
EKI C40180.00

Figure 3-10

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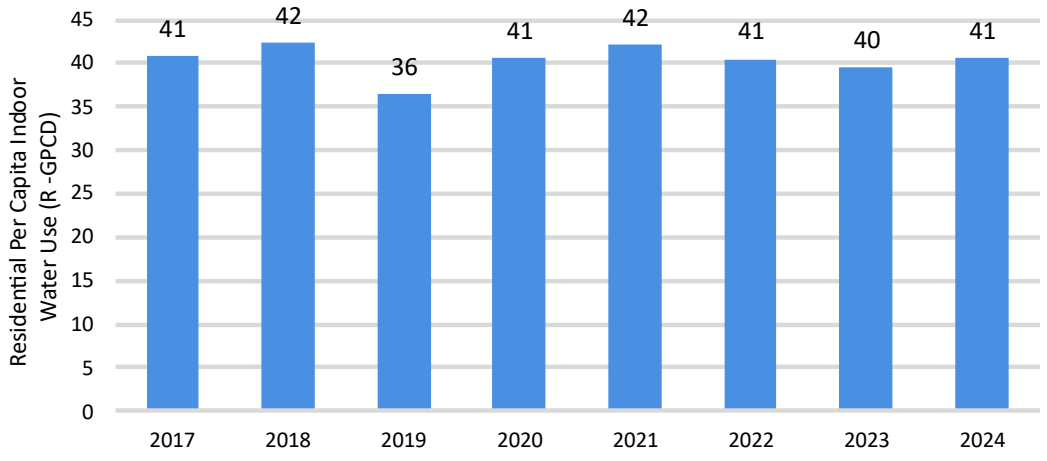
Table 3-5 Estimated Residential Per Capita Indoor Water Use

Year	Water Use (AFY)		Indoor Water Use Percentage		Total Indoor Residential Water Use (AFY)	Population	Estimated Indoor R-GPCD (a)
	SFR	MFR	SFR	MFR			
2017	9,008	2,979	60%	89%	8,088	176,688	41
2018	8,578	2,966	66%	94%	8,409	177,202	42
2019	8,745	2,978	54%	81%	7,156	175,183	36
2020	9,863	3,309	56%	79%	8,097	178,059	41
2021	8,449	2,984	69%	85%	8,390	177,623	42
2022	7,958	3,078	67%	86%	7,940	175,007	41
2023	7,983	3,261	64%	81%	7,758	175,013	40
2024	8,562	3,438	61%	80%	7,962	174,890	41

Abbreviations:
AFY = acre-feet per year
R-GPCD = residential gallon per capita per day

Note:
(a) The estimated indoor R-GPCD is calculated from historical SFR and MFR water use from Table 3-2 estimated indoor water use percentages estimated on **Figure 3-7**, and population from **Table 5-2**.

Figure 3-11 Estimated Residential Per Capita Indoor Water Use



Abbreviations:
R-GPCD = residential gallon per capita per day

Notes:

(a) The estimated indoor R-GPCD is calculated by total indoor residential water use from **Table** 3-5 and population from **Table 5-2**.

4 CONSERVATION PROGRAM PARTICIPATION

This section evaluates past participation in water conservation programs by City customers, including historic program participation and estimated water savings associated with program participation. The purpose of this section is to inform future program selection and implementation and support the demand management measure (DMM) reporting required in the UWMP under CWC § 10631(e).[1]

For six water conservation programs selected by the City, additional analyses have been conducted, including (1) a refined estimate of the actual water conservation savings achieved by City customers based on customer billing data (Section 4.3.2), and (2) an assessment of program participation trends in relation to spatial distribution (Section 4.4), property characteristics (Section 4.5), and customer demographics (Section 4.6). The following six programs were included in the detailed analyses:

1. SFR Cash for Grass Rebate Program*
2. SFR WaterSmart Check-up (Indoor) Program*
3. SFR WaterSmart Check-up (Outdoor) Program*
4. CII and MFR Cash for Grass Rebate Program*
5. CII WaterSmart Check-up (Indoor) Program
6. CII and MFR WaterSmart Check-up (Outdoor) Program

The goals of these more detailed analyses are to identify participation drivers and to help the City better understand which customers are participating in which programs. The City can accordingly use this information to inform the strategic design, selection, and marketing of future conservation programs and services.

Four of the programs (marked with an asterisk "*") were also analyzed in the 2020 Water Demand Analysis and Water Conservation Measure Update (2020 Report; EKI, 2020). This report provides an update to that earlier analysis by extending water savings estimates for these programs through more recent years and focusing on participation trends based on data collected from 2020 through 2024.

4.1 Conservation Programs

The description of water conservation programs, eligible customer classes, and program run dates provided by the City to their customers is summarized in **Table 4-1** below. The City currently implements 20 conservation programs offered directly to customers.

[1] The information presented herein supports a portion of the required DMM analysis, focusing on device and education-focused programs. Additional details regarding customer billing rates and structure, conservation staffing levels, customer metering, etc. are required under CWC § 10631(e), but not addressed herein.

Table 4-1 Description of Conservation Programs

Program	Description	Eligible Customer Class(es)	Program Run Dates
HECW Rebate Program	Rebate for upgrading to an eligible high-efficiency clothes washer(s).	MFR, CII (Indoor)	1998-Current
WaterSmart Check-up (Indoor) Program	Site visit to review indoor water consumption patterns, fixtures, meter reading, irrigation schedule, best practices, etc.	SFR (Indoor)	2012-Current
SFR WaterSmart Check-up (Outdoor) Program		SFR (Outdoor)	2012-Current
Cash for Grass Rebate Program	Rebate per square foot for removing lawn and replacing it with low-water-use landscaping.	SFR, MFR, CII (Outdoor)	2007-Current
Irrigation Efficiency Rebate	Rebate for upgrading to high-efficiency irrigation equipment (materials only, not labor). This can be for a variety of materials, including weather-based timers, pressure reducers, spray bodies, etc.	SFR (Outdoor)	2006-Current
Irrigation Efficiency Rebate		CII/MFR (Outdoor)	2006-Current
Large Landscape WaterSmart Check-up Program	Site visit to review outdoor consumption patterns, fixtures, meter reading, irrigation schedule, best practices, etc.	CII/MFR (Outdoor)	2012-Current
Pool Cover Rebate	Rebate for purchasing and installing a pool cover.	SFR (can include CII/MFR) (Outdoor)	2022-Current
Rainwater Harvesting Rebate	Rebate for installing a rainwater harvesting system.	SFR (can include CII/MFR) (Outdoor)	2009-Current

Table 4-1 Description of Conservation Programs (Continued)

Program	Description	Eligible Customer Class(es)	Program Run Dates
Recirculating Hot Water Pump Rebate	Rebate for installing an eligible hot water recirculating pump.	SFR (can include CII/MFR) (Indoor)	2014-2023
High Efficiency Toilet Rebate	Rebate for upgrading to high-efficiency toilet(s).	SFR, MFR, CII (Indoor)	2007-2010 2023-Current
High Efficiency Urinal Rebate	Rebate for upgrading to high-efficiency urinals.	CII (can include MFR/SFR) (Indoor)	2009-Current
Efficient Fixture Direct Install Program	Direct installation of toilets, showerheads, and aerators at SFR and MFR sites, and toilets and aerators at CII sites, at no cost to the customer.	SFR, MFR, CII (Indoor)	2016-2017 2022-Current
Greywater Reuse	Rebate for installing a graywater system. This system uses specific indoor water for irrigation, which means it is likely only saving water during irrigation months.	SFR (can include CII/MFR) (Both)	2010-Current
Sustained Reduction	Rebate for installing any equipment or technology that the City does not already have a rebate for, which results in a sustained water reduction (materials only, not labor).	CII, MFR, SFR (Both)	2000-Current
WaterSmart Check-up (Indoor) Program	Site visit to review indoor water consumption patterns, fixtures, meter reading, irrigation schedule, best practices, etc.	MFR (Indoor)	2012-Current
WaterSmart Check-up (Indoor) Program		CII (Indoor)	2012-Current

Table 4-1 Description of Conservation Programs (Continued)

Program	Description	Eligible Customer Class(es)	Program Run Dates
Take it From The Tap! School Education Program (City of Santa Rosa)	Classroom Education Program for K-12. Lesson plan educates students on the safety, health, environmental, and cost benefits of choosing tap water. Reusable water bottles are given to each student as a tool to help them remember to choose tap water first. Program material access is provided to cities within the SMSWP. City interns tailor the material for the appropriate age group.	All	2016-Current

Abbreviations:
CII = Commercial, Industrial, and Institutional
HECW = High-Efficiency Clothes Washer
gpf = gallons per flush
MFR = Multi-Family Residential
SFR = Single-Family Residential
sq ft = square feet

In addition to programs offered by the City, several regional programs are offered through the SMSWP, including: (1) education and outreach to schools, (2) public outreach and educational workshops, (3) Qualified Water Efficient Landscaper (QWEL) Training, and (4) garden tours.

4.2 Historical Conservation Program Participation

Table 4-3 summarizes participation in the City's conservation programs from 1998 through 2024. Darker shading indicates higher participation values. The table shows the total number of participants in each program as a percentage of the total number of accounts in the predominant sector. This percentage serves as a measurement of program saturation (i.e., how extensively the program has been adopted within the target customer base) and whether there remains future potential from the program. **Figure 4-1** further illustrates the data included in **Table 4-3**, showing the participation by end use, sector group, or program categories, and turf replacement square footage over time.

Among the programs offered by the City, the programs that reached the largest number of customers and their respective sector participation rates included:

- CII WaterSmart Check-up (Indoor), 98% of the CII sector;[2]
- Residential High-Efficiency Clothes Washer (HECW) Rebate, 32% in the SFR sector;
- CII/MFR WaterSmart Check-up (Outdoor), 14% in the MFR and CII sectors;[2] and

[2] Participation percentages are based on the total number of accounts in each sector, but it should be noted that some customers have participated in programs multiple times, particularly the check-ups, while others have not participated at all. As a result, the percentage is approximate and may not reflect exact participation.

- CII/MFR HECW Rebate Programs, 17% in the MFR and CII sectors.

Participation in the CII WaterSmart Check-up (Indoor) Program was slow to start, with significant adoption in 2016 and 2017, followed by stable participation in recent years. The Residential HECW Rebate Program experienced early and steady adoption, but participation has greatly declined over time. The CII/MFR WaterSmart Check-up (Outdoor) has shown fluctuations and has remained relatively stable in the past two years. Participation in the CII/MFR HECW Rebate Program increased steadily early on, followed by a decline, with no participation in the past five years.

As shown on **Figure 4-1,** graph A, participation in outdoor programs has remained stable over time whereas participation in indoor programs has decreased, with a large drop around 2017, but is starting to trend upward. Participation from the CII sector (graph B) has been trending low over the past four years, while residential participation has been trending upward. Participation in the turf replacement programs (graph C) has varied over time and has had the highest popularity during initial program implementation and drought periods. Looking at all programs per program category, most programs have a low adoption rate over the recent five years; however, WaterSmart Check-ups (Audits & Reports program category) are remaining steady, and High-Efficiency Toilet (HET) programs are trending upward largely due to the Efficient Fixture Direct Install Program that commenced in 2022 and continues to the present.

Table 4-2 summarizes participation in the regional SMWSP water conservation direct instruction school education and outreach programs from the 2020-2021 through 2024-2025 school years. Over this period, 29,058 students were reached by direct instruction. Additional students were reached through indirect instruction such as assemblies, video and poster contests, and other educational materials.

Table 4-2 Participation in SMSWP School Education Programs, Direct Instruction

Grade Level	Number of Students Reached by School Year				
	2020-2021	2021-2022	2022-2023	2023-2024	2024-2025
Kindergarten	-	376	472	707	1,250
1st – 3rd Grade	497	501	810	2,298	3,796
4th – 5th Grade	1,505	1,560	2,041	2,123	1,901
Middle/High School	374	729	3,096	3,264	1,670
Other	-	-	-	88	-
Total	**2,376**	**3,166**	**6,419**	**8,480**	**8,617**

4.3 Estimated Savings from Past Conservation Programs

4.3.1 Water Savings Based on AWE Model

The Alliance for Water Efficiency (AWE) model[3] was used to estimate water savings associated with the implementation of all device or turf replacement and Water Smart Checkup programs identified in **Table 4-3** for the period of 2010 to 2024. Water savings estimates were based on AWE model default values and other literature values as needed. The specific assumptions used in this assessment are presented in Appendix B**.** The results of this analysis are presented in **Table** 4-4 and illustrated on **Figure 4-2**. It is estimated that conservation programs included in this assessment resulted in active savings of 12,016 AF between 2010 and 2024.

As shown on **Figure 4-2,** the most successful program types in terms of estimated savings include the following, listed in order of savings:

- Audits & Reports (WaterSmart Check-ups),
- Irrigation Systems & Devices (Irrigation Efficiency Rebate Program),
- Clothes Washers (Residential and Commercial HECW Rebate Programs),
- Turf Replacement (Cash for Grass Rebate Programs), and
- HET (HET Rebate and Efficient Fixture Direct Install Programs).

In addition, over this period, it is estimated that 1,920 AF was saved through passive savings.[4] Thus, total active and passive savings are estimated to be 13,936 AF.

[3] Alliance for Water Efficiency, Water Conservation Tracking Tool Version 4.3.
[4] Passive water savings are water savings associated with the natural replacement of water-using fixtures and devices with higher efficiency ones, due to plumbing code and market changes. Passive savings are estimated for the whole service area.

Table 4-3 Summary of Conservation Program Participation
City of Santa Rosa, Sonoma-Marin Water Saving Partnership

Program Name	End Use		Program Category	Number of Program Participants																				
	Sector (a)	Indoor/ Outdoor		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
HECW Rebate Program	MFR, CII	Indoor	Clothes Washers	24	53	33	12	41	69	75	76	76	54	79	66	81	52	31	30	19	10	4	1	3	2
HECW Rebate Program	SFR	Indoor	Clothes Washers	482	647	451	104	486	981	920	1,175	1,231	1,221	1,460	1,077	1,243	794	607	647	361	178	137	61	50	36
WaterSmart Check-up (Indoor) Program	SFR	Indoor	Audits & Reports	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	186	261	122	541	1,009	202	142
WaterSmart Check-up (Outdoor) Program	SFR	Outdoor	Audits & Reports	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9	145	269	96	92	64	118	86
WaterSmart Check-up (Indoor) Program	MFR	Indoor	Audits & Reports	-	-	-	-	-	-	-	-	-	-	5	14	17	17	8	27	32	25	68	144	6	3
WaterSmart Check-up (Indoor) Program	CII	Indoor	Audits & Reports	-	-	-	-	-	-	-	-	-	-	-	-	-	-	31	31	31	139	607	1,079	219	150
WaterSmart Check-up (Outdoor) Program	MFR, CII	Outdoor	Audits & Reports	-	-	-	-	-	-	-	-	-	-	-	-	-	-	13	165	294	104	97	71	126	87
Irrigation Efficiency Rebate	SFR	Outdoor	Irrigation Systems & Devices	-	-	-	-	-	-	-	-	40	161	382	227	124	55	51	80	49	29	10	10	6	1
Irrigation Efficiency Rebate	MFR, CII	Outdoor	Irrigation Systems & Devices	-	-	-	-	-	-	-	-	-	14	33	36	51	18	18	7	15	16	11	0	0	4
Pool Cover Rebate	SFR, MFR, CII	Outdoor	Pools & Fountains	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rain Water Harvesting Rebate	SFR, MFR, CII	Outdoor	Rainwater Harvesting	-	-	-	-	-	-	-	-	-	-	-	1	4	2	3	2	13	43	25	6	2	1
Recirculating Hot Water Pump Rebate	SFR, MFR, CII	Indoor	Cooling & Heating Systems	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	29	70	28	18	10	10
High Efficiency Toilet Rebate	SFR, MFR, CII	Indoor	HET	-	-	-	-	-	-	-	-	-	152	245	481	207	-	-	-	-	-	-	-	-	-
Efficient Fixture Direct Install Program Residential	SFR, MFR	Indoor	HET	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	510	1,060	-	-
Efficient Fixture Direct Install Program Commercial	CII	Indoor	HET	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Greywater Rebate	SFR, MFR, CII	Both	Greywater	-	-	-	-	-	-	-	-	-	-	-	-	2	17	21	3	3	8	1	2	-	-
Sustained Reduction	CII, MFR, SFR	Both	Other	-	-	1	2	1	0	3	2	0	0	1	2	0	6	8	3	4	5	2	6	0	2
High Efficiency Urinal Rebate	CII, MFR, SFR	Indoor	Urinal (0.125 gpf)	-	-	-	-	-	-	-	-	-	-	-	-	6	0	0	1	1	1	0	4	0	0
Total Turf Removed (square feet)																									
Cash for Grass Rebate Green Exchange Program	SFR	Outdoor	Turf Replacement	-	-	-	-	-	-	-	1,488	109,098	185,113	291,934	212,486	124,001	114,519	99,243	272,304	476,238	279,288	21,326	23,629	9,359	744
Cash for Grass Rebate Green Exchange Program	MFR, CII	Outdoor	Turf Replacement	-	-	-	-	-	-	-	-	53,969	171,118	94,679	86,306	54,127	80,315	37,580	64,955	108,223	103,360	6,436	5,000	12,045	0
Rainwater Storage Installed (gallons)																									
Rain Water Harvesting Rebate	SFR, MFR, CII	Outdoor	Rainwater Harvesting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Active AMI Meters																									
AMI Leak Notifications Program	All	Both	Leaks and Water Losses	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	6,895	32,738	39,999

Table 4-3 Summary of Conservation Program Participation
City of Santa Rosa, Sonoma-Marin Water Saving Partnership

Program Name	End Use		Program Category	Number of Program Participants						Pct. of Accounts (b)
	Sector (a)	Indoor/ Outdoor		2020	2021	2022	2023	2024	Total	
HECW Rebate Program	MFR, CII	Indoor	Clothes Washers	-	-	-	-	-	**891**	**13.9%**
HECW Rebate Program	SFR	Indoor	Clothes Washers	46	34	58	37	29	**14,553**	**31.5%**
WaterSmart Check-up (Indoor) Program	SFR	Indoor	Audits & Reports	82	25	158	116	101	**2,971**	**6.4%**
WaterSmart Check-up (Outdoor) Program	SFR	Outdoor	Audits & Reports	60	209	131	119	110	**1,508**	**3.3%**
WaterSmart Check-up (Indoor) Program	MFR	Indoor	Audits & Reports	0	10	9	0	2	**387**	**11.0%**
WaterSmart Check-up (Indoor) Program	CII	Indoor	Audits & Reports	8	31	26	31	19	**2,846**	**97.8%**
WaterSmart Check-up (Outdoor) Program	MFR, CII	Outdoor	Audits & Reports	4	45	30	22	22	**1,080**	**16.8%**
Irrigation Efficiency Rebate	SFR	Outdoor	Irrigation Systems & Devices	11	15	27	24	14	**1,316**	**2.8%**
Irrigation Efficiency Rebate	MFR, CII	Outdoor	Irrigation Systems & Devices	1	5	5	15	2	**251**	**3.9%**
Pool Cover Rebate	SFR, MFR, CII	Outdoor	Pools & Fountains	-	-	11	7	2	**20**	**0.0%**
Rain Water Harvesting Rebate	SFR, MFR, CII	Outdoor	Rainwater Harvesting	4	8	13	21	12	**160**	**0.3%**
Recirculating Hot Water Pump Rebate	SFR, MFR, CII	Indoor	Cooling & Heating Systems	4	8	24	7	1	**209**	**0.4%**
High Efficiency Toilet Rebate	SFR, MFR, CII	Indoor	HET	-	-	-	24	14	**1,123**	**2.1%**
Efficient Fixture Direct Install Program Residential	SFR, MFR	Indoor	HET	-	-	0	644	712	**2,926**	**5.9%**
Efficient Fixture Direct Install Program Commercial	CII	Indoor	HET	-	-	0	0	217	**217**	**0.4%**
Greywater Rebate	SFR, MFR, CII	Both	Greywater	0	2	3	3	1	**66**	**0.1%**
Sustained Reduction	CII, MFR, SFR	Both	Other	1	0	0	2	0	**51**	**0.1%**
High Efficiency Urinal Rebate	CII, MFR, SFR	Indoor	Urinal (0.125 gpf)	3	1	3	0	0	**20**	**0.0%**
				Total Turf Removed (square feet)						
Cash for Grass Rebate Green Exchange Program	SFR	Outdoor	Turf Replacement	22,872	82,378	132,135	146,109	47,107	**2,651,371**	-
Cash for Grass Rebate Green Exchange Program	MFR, CII	Outdoor	Turf Replacement	3,155	69,034	125,945	107,876	31,254	**1,215,377**	-
				Rainwater Storage Installed (gallons)						
Rain Water Harvesting Rebate	SFR, MFR, CII	Outdoor	Rainwater Harvesting	12,413	8,366	17,960	30,434	21,370	**90,543**	-
				Active AMI Meters						
AMI Leak Notifications Program	All	Both	Leaks and Water Losses	45,745	46,028	46,037	46,037	46,038	**46,038**	(d)

Table 4-3 Summary of Conservation Program Participation
City of Santa Rosa, Sonoma-Marin Water Saving Partnership

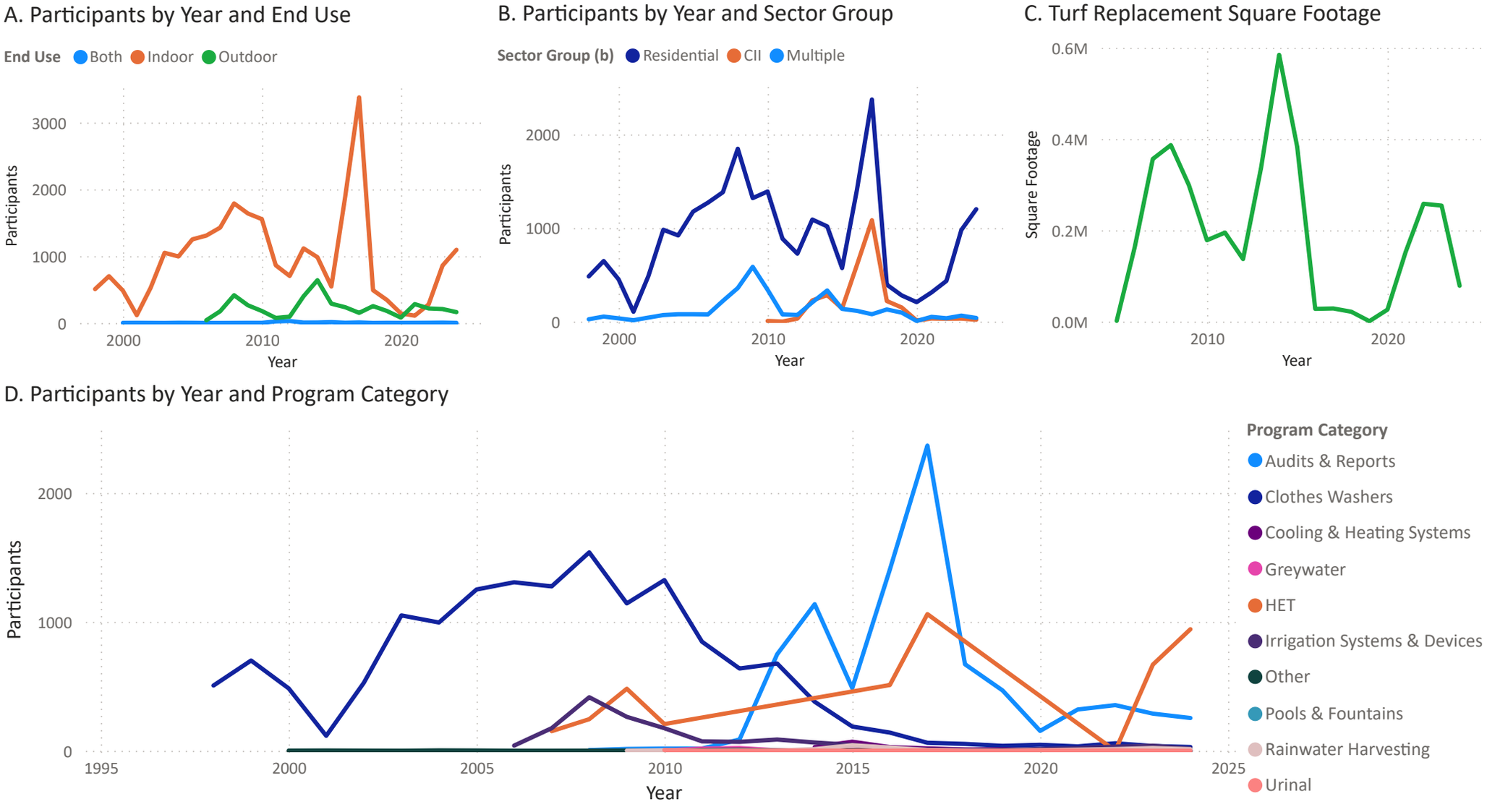
Abbreviations

AMI = advanced meter infrastructure
CII = Commercial, Industrial, Institutional
MFR = Multi-Familiy Residential
HECW = High Efficiency Clothes Washer
SFR = Single-family residential

Notes

(a) Predominant sector for program participants.
(b) Participation is calculated as a percentage of total accounts of the predominant sector indicated.
(c) Colored shading is added for visualization purposes. Green shading represents higher participation values
(d) The City began installing AMI meters in late 2016 and were fully installed by 2021. One meter is assumed per account. The City offers leak detection and notification to its customers on AMI meters. As such, the data in this row reflects the number of AMI meters installed.

Figure 4-1
Conservation Program Participation
City of Santa Rosa, Sonoma-Marin Saving Water Partnership



Abbreviations:
CII = commercial, industrial, institutional
HET = high efficiency toilet

Notes:
(a) See Table 4-3 for program end use, sector, category information and detailed program participation data.
(b) Programs are summarized by Residential, CII, Irrigation, or Multiple sector groups based on their targeted sectors. Programs that cannot be exclusively assigned to the Residential, CII, Irrigation sector groups are assigned to the Multiple sector group.
(c) Bathroom fixture direct installs are included in the HET program category.
(d) Participation in the AMI leaks notification program (i.e., AMI meters installed), outreach, and education programs are excluded from this figure.

Table 4-4 Estimated Water Savings Achieved by Conservation Programs and Passive Savings

City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Water Savings Type	End Use		Program Category	Estimated Annual Water Savings (AFY) (b)															Cumulative Water Savings (AF)
	Sector (a)	Indoor/ Outdoor		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
AMI Leaks Notification Program	All	Both	Leaks and Water Losses	0	0	0	0	0	0	0	6	30	38	44	44	44	44	44	292
HECW Rebate Program	MFR, CII	Indoor	Clothes Washers	8	13	16	19	20	21	22	22	14	10	7	4	2	1	1	179
HECW Rebate Program	SFR	Indoor	Clothes Washers	15	24	32	39	44	46	48	48	49	49	50	50	51	51	37	633
WaterSmart Check-up (Indoor) Program	SFR	Indoor	Audits & Reports	0	0	0	4	7	8	16	30	26	22	18	12	7	6	6	163
WaterSmart Check-up (Outdoor) Program	SFR	Outdoor	Audits & Reports	0	0	0	5	12	12	13	12	12	9	8	12	13	13	13	133
WaterSmart Check-up (Indoor) Program	MFR	Indoor	Audits & Reports	0	0	0	1	1	1	2	3	2	2	1	1	0	0	0	15
WaterSmart Check-up (Outdoor) Program	MFR, CII	Outdoor	Audits & Reports	0	0	13	175	434	452	458	433	419	326	230	198	165	113	84	3,499
WaterSmart Check-up (Indoor) Program	CII	Indoor	Audits & Reports	0	0	10	78	151	164	321	592	519	433	335	215	70	43	25	2,956
Irrigation Efficiency Rebate	SFR	Outdoor	Irrigation Systems & Devices	4	5	7	9	10	11	12	12	12	12	9	8	7	5	4	127
Irrigation Efficiency Rebate	MFR, CII	Outdoor	Irrigation Systems & Devices	42	56	71	77	89	102	111	111	111	114	73	63	52	59	48	1,177
Pool Cover Rebate	SFR, MFR, CII	Outdoor	Pools & Fountains	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.4	0.4	1
Recirculating Hot Water Pump Rebate	SFR, MFR, CII	Indoor	Cooling & Heating Systems	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	10
High Efficiency Toilet Rebate	SFR, MFR, CII	Indoor	HET	3	2	2	2	2	2	1	1	1	1	1	1	1	1	1	21
Efficient Fixture Direct Install Program	SFR, MFR	Indoor	HET	0	0	0	0	0	0	18	54	53	51	50	49	48	69	92	484
Efficient Fixture Direct Install Program	CII	Indoor	HET	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	13
Greywater Rebate	SFR, MFR, CII	Both	Greywater	0	0.2	0.5	0.5	0.6	0.7	0.7	0.7	0.7	0.7	0.7	0.5	0.3	0.3	0.2	7
Sustained Reduction (c)	CII, MFR, SFR	Both	Other	52	60	65	66	66	74	75	75	75	117	117	117	117	117	117	1,311

Table 4-4 Estimated Water Savings Achieved by Conservation Programs and Passive Savings

City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Water Savings Type	End Use		Program Category	Estimated Annual Water Savings (AFY) (b)															Cumulative Water Savings (AF)
	Sector (a)	Indoor/ Outdoor		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	
High Efficiency Urinal Rebate	CII, MFR, SFR	Indoor	Urinal	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.02	0.02	0.02	0.02	0.03	0.02	0.01	0.3
Cash for Grass Rebate Green Exchange Program	SFR	Outdoor	Turf Replacement	4	7	10	18	32	41	41	42	42	42	39	38	39	36	23	455
Cash for Grass Rebate Green Exchange Program	MFR, CII	Outdoor	Turf Replacement	5	13	16	23	33	43	43	44	45	45	40	39	47	51	44	531
Rain Water Harvesting Rebate	SFR, MFR, CII	Outdoor	Rainwater Harvesting	0	0.1	0.1	0.1	0.3	0.7	0.9	1.0	1.0	0.8	0.4	0.2	0.3	0.5	0.6	7
Conservation Program Water Savings (Active Savings)				*131*	*182*	*243*	*516*	*903*	*978*	*1,183*	*1,488*	*1,413*	*1,274*	*1,025*	*852*	*664*	*611*	*553*	*12,016*
Passive Water Savings (d)				*124*	*103*	*116*	*120*	*158*	*157*	*121*	*110*	*182*	*167*	*155*	*127*	*115*	*92*	*74*	*1,920*
Total Water Savings				**256**	**284**	**359**	**636**	**1,061**	**1,135**	**1,304**	**1,598**	**1,595**	**1,441**	**1,180**	**979**	**779**	**703**	**627**	**13,936**

Abbreviations

CII = Commercial, Industrial, Institutional
HECW = High Efficiency Clothes Washer
SFR = Single-family residential
HET = High Efficiency Toilet
MFR = Multi-family residential

Notes

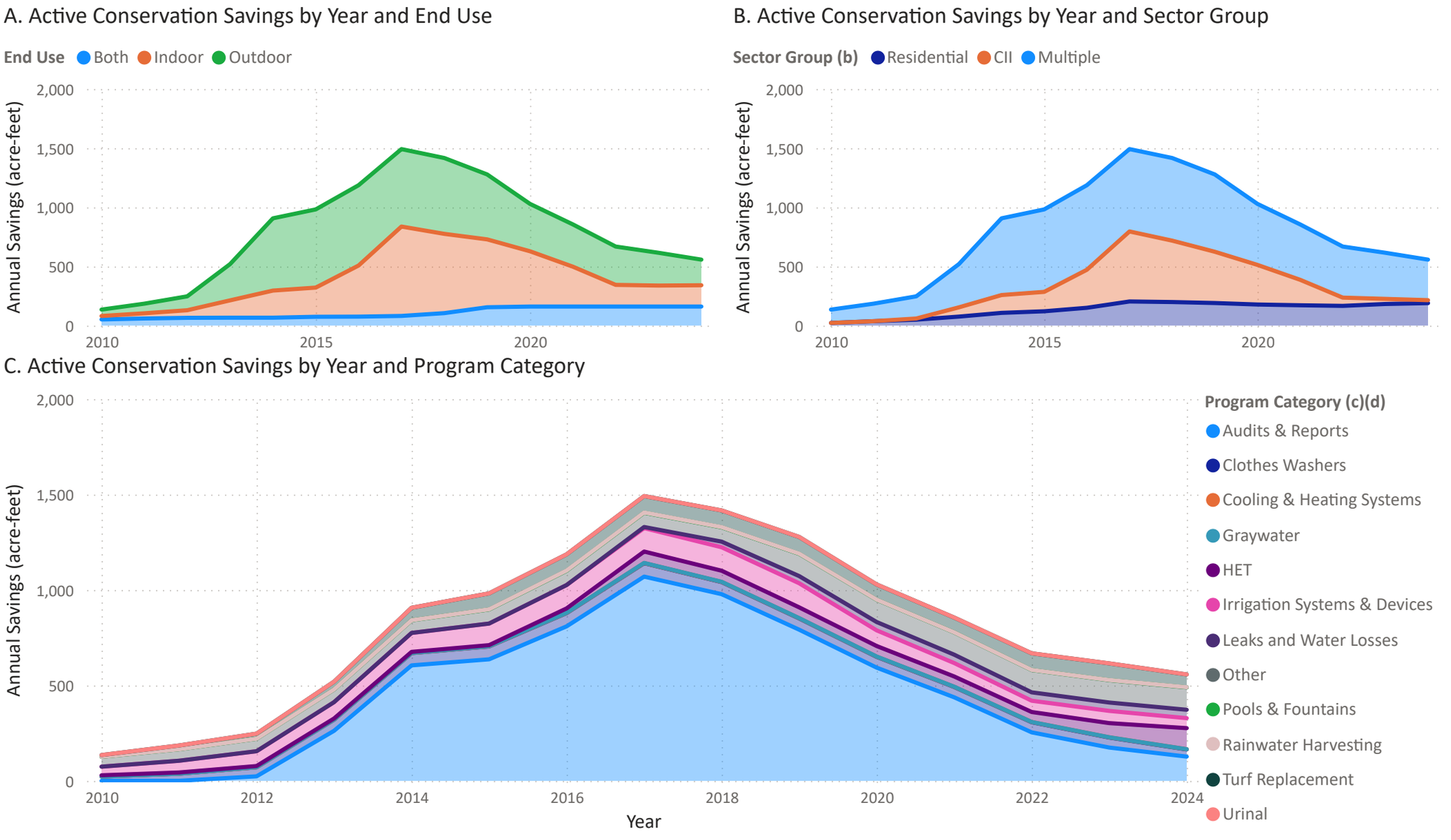
(a) Predominant sector for program participants.

(b) Water savings are estimated per the AWE model based on program participation data. Program water saving assumptions are included in Appendix B.

(c) Water savings for the sustained reduction program are per the average monthly water savings provided by City staff, assuming the monthly savings remained consistent following the assessment period.

(d) Passive water savings are water savings associated with the natural change out of water using fixtures and devices with higher efficiency ones, due to plumbing code and market changes. Passive savings are estimated for the whole service area.

Figure 4-2
Estimated Annual Water Savings Achieved by Conservation Programs
City of Santa Rosa, Sonoma-Marin Saving Water Partnership



Abbreviations:
CII = commercial, industrial, institutional
HET = high efficiency toilet

Notes:
(a) See Table 4-4 for program end use, sector, category information and detailed savings by program.
(b) Programs are summarized by Residential, CII, Irrigation, or Multiple sector groups based on their targeted sectors. Programs that cannot be exclusively assigned to the Residential, CII, Irrigation sector groups are assigned to the Multiple sector group.
(c) HET program also includes bathroom direct installs.
(d) Program categories with minimal historical savings may not be visible from this figure.

4.3.2 Estimated Water Savings for Six Selected Programs Based on Customer Billing Data

The City currently estimates water use savings associated with specific water conservation programs based on its in-house program analysis as wells savings reported in previous studies, available literature, and the AWE model (AWE, 2021). To verify past estimates and better represent local conditions, City customer billing data were analyzed using a modified *Difference in Difference Estimation Method* (Columbia Public Health, 2013) to assess typical water savings achieved through implementation of the six selected programs. As described further in Appendix C, this method compares the water use patterns in a participant group to that of a cohort group to isolate the effect of program participation on water use.

Table 4-5 summarizes the average estimated water savings for each water conservation program from 2013 through 2021[8]. **Table 4-6** through **Table 4-11** present the detailed results of these analyses, including the number of participants analyzed each year, the average rebate amounts, the annual change in water use among participants and their comparison cohort groups, and the estimated savings values by year.

Overall, the results indicate that program participants tended to reduce water use following participation, consistent with the intended impacts of these initiatives. However, the data also shows considerable variation in estimated savings across accounts and years as indicated by the standard deviation of savings across the years. This variability means that while the direction of the effect aligns with expectations, the magnitude of savings for individual programs should be interpreted with caution. Negative savings values (on **Table 4-6** through **Table 4-11**) suggest that, in those years, the program did not result in overall water savings. Negative values were observed across several programs and years, most often where participant counts were small. These instances likely reflect the combined effects of small sample sizes, program design differences, or customer-level variability, which can lead to counterintuitive results. The results show:

- SFR Cash for Grass Rebate Program – Estimated average savings of approximately 8,000 gallons per year (gpy) per account, with a standard deviation nearly equal to the mean. This indicates that while many participants likely saved water, some showed little change or even increases, yielding high variance in savings overall.
- SFR WaterSmart Check-up (Indoor) – Average savings of approximately 5,600 gpy with a standard deviation of 4,400 gpy suggests moderate consistency but still substantial variation. The estimated savings fall within a plausible range for indoor efficiency efforts.
- SFR WaterSmart Check-up (Outdoor) – Average savings of approximately 9,800 gpy with even higher standard deviation, implying that outdoor audit outcomes vary widely depending on landscape characteristics, historical irrigation patterns, presence of leaks of variable sizes, and follow-through on recommendations.
- CII and MFR Cash for Grass Rebate Program – High average savings (approximately 11,600 gpy) but extremely high standard deviation (approximately 39,700 gpy) means

[8] This time period was selected so that at least three full years of water use billing data could be analyzed following the program participation year.

results are dominated by a few large accounts, consistent with the diversity of commercial landscape sizes.

- CII WaterSmart Check-up (Indoor) Program – Negative point estimate (approximately -8,600 gpy) but with a standard deviation larger than the estimate itself (approximately 33,500 gpy). This large uncertainty suggests the apparent negative result is not statistically meaningful; it may reflect random variation or data limitations rather than an increase in use. Only 68 accounts qualified for this analysis. As such, individual instances such as an increase in process water use that overwhelm savings would have a larger impact on the overall result.
- CII and MFR WaterSmart Check-up (Outdoor) Check-up – Similar to CII WaterSmart Check-up (Indoor) Program, negative point estimate (approximately -128,000 gpy) but with a standard deviation larger than the estimate itself (approximately 163,000 gpy). Only ten accounts qualified for this analysis.

Table 4-5 also shows the default water savings factors included in the AWE model, which are based on available literature values and other assumptions. In comparison, water savings based on City billing data are not fully consistent with these default values. City-specific savings for all programs are lower than model default values, resulting in potential for over-estimation of program savings if the default values were used.

It should be noted that per year results in this report differ from those presented in the 2020 Report (EKI, 2020) for several reasons: (1) new program participation data are included, which changed the participants that qualifies for this analysis and their corresponding water use patterns; and (2) data-processing updates were applied including removal of duplicates, backfilling missing account numbers, exclusion of the top 1% of outliers, and limiting the dataset to accounts with complete annual billing records (See Appendix C).

Across all programs, the difference-in-difference analysis results indicate that average water savings are mostly directionally consistent with expected program impacts, but the high standard deviations suggest that year-to-year and participant-to-participant variation is substantial. These results should therefore be interpreted as evidence of general conservation effects rather than precise measurements of program-specific performance.

Table 4-5 Average Estimated Water Savings Achieved by Selected Conservation Programs, 2013-2021

Conservation Program	Number of Participants in Analysis (a)	Estimated Savings due to Programs (b) (gpy/acct)	Estimated Standard Deviation in Savings (gpy/acct)	Estimated City-Specific Unit Savings	Default AWE Model Unit Savings Factors
SFR Cash for Grass Rebate Program	591	7,983	7,998	9.69 gpy/sq ft	36 gpy/sq ft
SFR WaterSmart Check-up (Indoor) Program	589	5,660	4,397	5,660 gpy/acct	12,373 gpy/acct
SFR WaterSmart Check-up (Outdoor) Program	138	9,818	13,572	9,818 gpy/acct	
CII and MFR Cash for Grass Rebate Program	67	11,596	39,691	4.45 gpy/sq ft	36 gpy/sq ft
CII WaterSmart Check-up (Indoor) Program	68	-8,644 (c)	33,474	-8,644 gpy/acct	--
CII and MFR WaterSmart Check-up (Outdoor) Program	10	-238,566 (c)	237,266	-238,566 gpy/acct	325,945 gpy/acct

Abbreviations:

CII = commercial, industrial, and institutional
MFR = multi-family residential
SFR = Single Family Residential

Notes:

(a) Program participants included in this analysis are limited to those that: (1) have only participated in the specified program, (2) have only participated in the program in the specified year, and (3) have sufficient water use data within the study periods. Thus, participants in this analysis may be substantially fewer than have participated in a program overall and may span shorter timeframe of participation than the total program lifetime.

(b) Estimated annual water savings associated with the program are calculated as the incremental amount of water saved by the program participants over that of the comparison cohort accounts, as shown in **Table 4-6** through **Table 4-11**. Water savings comparison cohorts are stratified (1) geographically based on Census Block Groups for single-family customers and (2) by sector type for other customer sectors.

(c) A negative value indicates that average water use increased following program participation.

Table 4-6 Estimated Water Savings Achieved by the SFR Cash for Grass Rebate Green Exchange Program

Year	Number of Participants	Total Turf Removed (sq ft)	Average Water Use Reduction		Estimated Savings due to Program (gpy/acct) (c)	Estimated Unit Savings (gpy/sq ft) (d)
			Participant Group (gpy) (a)	Cohort Group (gpy) (b)		
2013	38	33,931	19,145	12,679	6,466	7.24
2014	118	84,989	26,144	15,131	11,013	15.29
2015	247	204,116	17,893	10,195	7,697	9.31
2016	95	93,563	5,453	2,362	3,091	3.14
2017	11	7,609	-4,455	-6,455	2,000	2.89
2018	10	6,752	-9,017	-4,188	-4,829	-7.15
2019	6	2,785	-7,944	-801	-7,143	-15.39
2020	9	6,402	21,426	7,110	14,316	20.13
2021	57	46,794	24,868	8,724	16,144	19.67
Total	**591**	**486,941**	--	--	--	--
Average	--	--	**17,214**	**9,228**	**7,987**	**9.69**

Abbreviations:
sq ft = square foot
gpy = gallons per year
gpy/acct = gallons per year per account
gpy/sq ft = gallons per square foot
-- = not applicable

Notes:
(a) Program participants included in this analysis are limited to those that: (1) have only participated in the specified program, (2) have only participated in the specified year, and (3) have sufficient water use data within the study periods. Thus, participants in this analysis may be substantially fewer than have participated in a program overall and may span shorter timeframe of participation than the total program lifetime.
(b) Cohorts accounts included in this analysis are customers that have not participated in any programs based on available data. Water savings comparison cohorts are stratified (1) geographically based on Census Block Groups for single-family customers and (2) by sector type for other customer sectors.
(c) Estimated annual water savings associated with the program are calculated as incremental amount of water saved by the program participants over that of the comparison cohort accounts, i.e., water use reduction observed in the participant group subtracted by water use reduction observed in the cohort group.
(d) Estimated unit savings are total estimated savings divided by total turf removed. In other words, the estimated savings per account multiplied by the number of participants divided by the total turf removed.

Table 4-7 Estimated Water Savings Achieved by the SFR WaterSmart Check-up (Indoor) Program

Year	Number of Participants	Average Water Use Reduction		Estimated Savings due to Program (gpy/acct) (c)
		Participant Group (gpy) (a)	Cohort Group (gpy) (b)	
2013	13	24,833	12,957	11,877
2014	16	20,115	13,950	6,165
2015	7	6,143	8,076	-1,933
2016	121	5,525	2,365	3,160
2017	330	3,192	-4,767	7,958
2018	42	-3,972	-3,316	-656
2019	31	1,710	1,111	599
2020	20	7,642	5,156	2,485
2021	9	11,481	6,474	5,007
Total	**589**	--	--	--
Average	--	**4,333**	**-1,329**	**5,660**

Abbreviations:

gpy = gallons per year
gpy/acct = gallons per year per account
-- = not applicable

Notes:

(a) Program participants included in this analysis are limited to those that: (1) have only participated in the specified program, (2) have only participated in the specified year, and (3) have sufficient water use data within the study periods. Thus, participants in this analysis may be substantially fewer than have participated in a program overall and may span shorter timeframe of participation than the total program lifetime.

(b) Cohorts accounts included in this analysis are customers that have not participated in any programs based on available data. Water savings comparison cohorts are stratified (1) geographically based on Census Block Groups for single-family customers and (2) by sector type for other customer sectors.

(c) Estimated annual water savings associated with the program are calculated as incremental amount of water saved by the program participants over that of the comparison cohort accounts, i.e., water use reduction observed in the participant group subtracted by water use reduction observed in the cohort group.

Table 4-8 Estimated Water Savings Achieved by the SFR WaterSmart Check-up (Outdoor) Program

Year	Number of Participants	Average Water Use Reduction		Estimated Savings due to Program (gpy/acct) (c)
		Participant Group (gpy) (a)	Cohort Group (gpy) (b)	
2013	6	20,333	11,251	9,082
2014	10	28,933	14,888	14,046
2015	2	28,833	11,912	16,921
2016	2	-4,417	861	-5,278
2017	1	-10,667	-4,553	-6,114
2018	4	-10,542	-3,876	-6,666
2019	5	35,767	123	35,643
2020	19	16,088	6,520	9,568
2021	89	17,830	8,734	9,095
Total	**138**	--	--	--
Average	--	**17,961**	**8,143**	**9,818**

Abbreviations:
gpy = gallons per year
gpy/acct = gallons per year per account
-- = not applicable

Notes:
(a) Program participants included in this analysis are limited to those that: (1) have only participated in the specified program, (2) have only participated in the specified year, and (3) have sufficient water use data within the study periods. Thus, participants in this analysis may be substantially fewer than have participated in a program overall and may span shorter timeframe of participation than the total program lifetime.
(b) Cohorts accounts included in this analysis are customers that have not participated in any programs based on available data. Water savings comparison cohorts are stratified (1) geographically based on Census Block Groups for single-family customers and (2) by sector type for other customer sectors.
(c) Estimated annual water savings associated with the program are calculated as incremental amount of water saved by the program participants over that of the comparison cohort accounts, i.e., water use reduction observed in the participant group subtracted by water use reduction observed in the cohort group.

Table 4-9 Estimated Water Savings Achieved by the CII and MFR Cash for Grass Rebate Green Exchange Program

Year	Number of Participants	Total Turf Removed (sq ft)	Average Water Use Reduction		Estimated Savings due to Program (gpy/acct) (c)	Estimated Unit Savings (gpy/sq ft) (d)
			Participant Group (gpy) (a)	Cohort Group (gpy) (b)		
2013	7	48,410	48,629	-7,625	56,253	8.13
2014	16	28,739	77,094	34,079	43,015	23.95
2015	24	54,911	-23,315	20,895	-44,210	-19.32
2016	11	26,707	29,576	9,761	19,814	8.16
2017	1	270	54,333	4,145	50,189	185.88
2020	1	3,155	27,333	-22,910	50,244	15.93
2021	6	21,286	72,567	-6,956	79,523	22.42
Total	**66**	**183,478**	--	--	--	--
Average	--	--	**28,132**	**15,761**	**12,371**	**4.45**

Abbreviations:

sq ft = square foot
gpy = gallons per year
gpy/acct = gallons per year per account
gpy/sq ft = gallons per square foot
-- = not applicable

Notes:

(a) Program participants included in this analysis are limited to those that: (1) have only participated in the specified program, (2) have only participated in the specified year, and (3) have sufficient water use data within the study periods. Thus, participants in this analysis may be substantially fewer than have participated in a program overall and may span shorter timeframe of participation than the total program lifetime.

(b) Cohorts accounts included in this analysis are customers that have not participated in any programs based on available data. Water savings comparison cohorts are stratified (1) geographically based on Census Block Groups for single-family customers and (2) by sector type for other customer sectors.

(c) Estimated annual water savings associated with the program are calculated as incremental amount of water saved by the program participants over that of the comparison cohort accounts, i.e., water use reduction observed in the participant group subtracted by water use reduction observed in the cohort group.

(d) Estimated unit savings are total estimated savings divided by total turf removed. In other words, the estimated savings per account multiplied by the number of participants divided by the total turf removed.

Table 4-10 Estimated Water Savings Achieved by the CII WaterSmart Check-up (Indoor) Program

Year	Number of Participants	Average Water Use Reduction		Estimated Savings due to Program (gpy/acct) (c)
		Participant Group (gpy) (a)	Cohort Group (gpy) (b)	
2013	2	27,167	-42,709	69,364
2015	6	52,889	24,217	28,672
2016	12	7,611	16,302	-8,691
2017	14	6,988	3,368	3,620
2018	2	-18,667	4,819	-23,486
2020	5	50,967	18,237	32,730
2021	27	-23,991	11,624	-35,615
Total	**68**	--	--	--
Average	--	**1,920**	**10,564**	**-8,644**

Abbreviations:
gpy = gallons per year
gpy/acct = gallons per year per account
-- = not applicable

Notes:
(a) Program participants included in this analysis are limited to those that: (1) have only participated in the specified program, (2) have only participated in the specified year, and (3) have sufficient water use data within the study periods. Thus, participants in this analysis may be substantially fewer than have participated in a program overall and may span shorter timeframe of participation than the total program lifetime.
(b) Cohorts accounts included in this analysis are customers that have not participated in any programs based on available data. Water savings comparison cohorts are stratified (1) geographically based on Census Block Groups for single-family customers and (2) by sector type for other customer sectors.
(c) Estimated annual water savings associated with the program are calculated as incremental amount of water saved by the program participants over that of the comparison cohort accounts, i.e., water use reduction observed in the participant group subtracted by water use reduction observed in the cohort group.

Table 4-11 Estimated Water Savings Achieved by the CII and MFR WaterSmart Check-up (Outdoor) Program

Year	Number of Participants	Average Water Use Reduction		Estimated Savings due to Program (gpy/acct) (c)
		Participant Group (gpy) (a)	Cohort Group (gpy) (b)	
2018	1	-62,667	4,819	-67,486
2020	6	-390,200	19,332	-409,532
2021	3	60,833	14,493	46,340
Total	**10**	--	--	--
Average	--	**-222,137**	**16,429**	**-238,566**

Abbreviations:
gpy = gallons per year
gpy/acct = gallons per year per account
-- = not applicable

Note:
(a) Program participants included in this analysis are limited to those that: (1) have only participated in the specified program, (2) have only participated in the specified year, and (3) have sufficient water use data within the study periods. Thus, participants in this analysis may be substantially fewer than have participated in a program overall and may span shorter timeframe of participation than the total program lifetime.
(b) Cohorts accounts included in this analysis are customers that have not participated in any programs based on available data. Water savings comparison cohorts are stratified (1) geographically based on Census Block Groups for single-family customers and (2) by sector type for other customer sectors.
(c) Estimated annual water savings associated with the program are calculated as incremental amount of water saved by the program participants over that of the comparison cohort accounts, i.e., water use reduction observed in the participant group subtracted by water use reduction observed in the cohort group.

4.4 Spatial Trends in Program Participation

Given the large amount of program participation data for some programs, it can be helpful to understand whether participation in these programs has been evenly distributed across the service area, or if participation tends to be clustered in certain regions. To identify program participation density for conservation programs in the City service area, a geostatistical spatial analysis was performed.[9] This analysis identifies participation "hot spots," which are areas where

[9] The Esri ArcGIS Pro 3.4 Optimized Hot Spot Analysis tool was used for spatial hot spot analysis of program participation. The hot spot analysis calculates a Getis-Ord GI* statistic for each cell, creating a map of statistically significant hot and cold spots. This evaluates how the event (in this case, participation in the program) clusters spatially, by looking at the cell in the context of the neighboring cells. For the purposes of this study, the override settings in the tool were used, specifying a 1,000-foot cell size in a hexagonal grid.

a higher density of participation is observed than would be expected by randomly distributed participation. Similarly, "cold spots," or areas of lower-than-expected participation, are identified. Ineligible parcels (i.e., parcels with no sector use relevant to each respective conservation program) were excluded from each analysis, as well as parcels larger than 1 acre to avoid skewing density mapping. It should be noted that the criteria for inclusion of participants for these analyses are different from those of Section 4.3.2, and thus the number of participants and range of dates analyzed for each program might be different. High density participation areas are identified in red and low-density participation areas are identified in blue on **Figure 4-3** through **Figure 4-8.**

Figure 4-3 through **Figure 4-5** show the results of the participation density analysis for the SFR Cash for Grass Rebate Green Exchange Program, the SFR WaterSmart Check-up (Indoor) Program, and the SFR WaterSmart Check-up (Outdoor) Program, all of which are offered to SFR customers. These three programs showed generally similar spatial patterns of participation during 2020-2024.

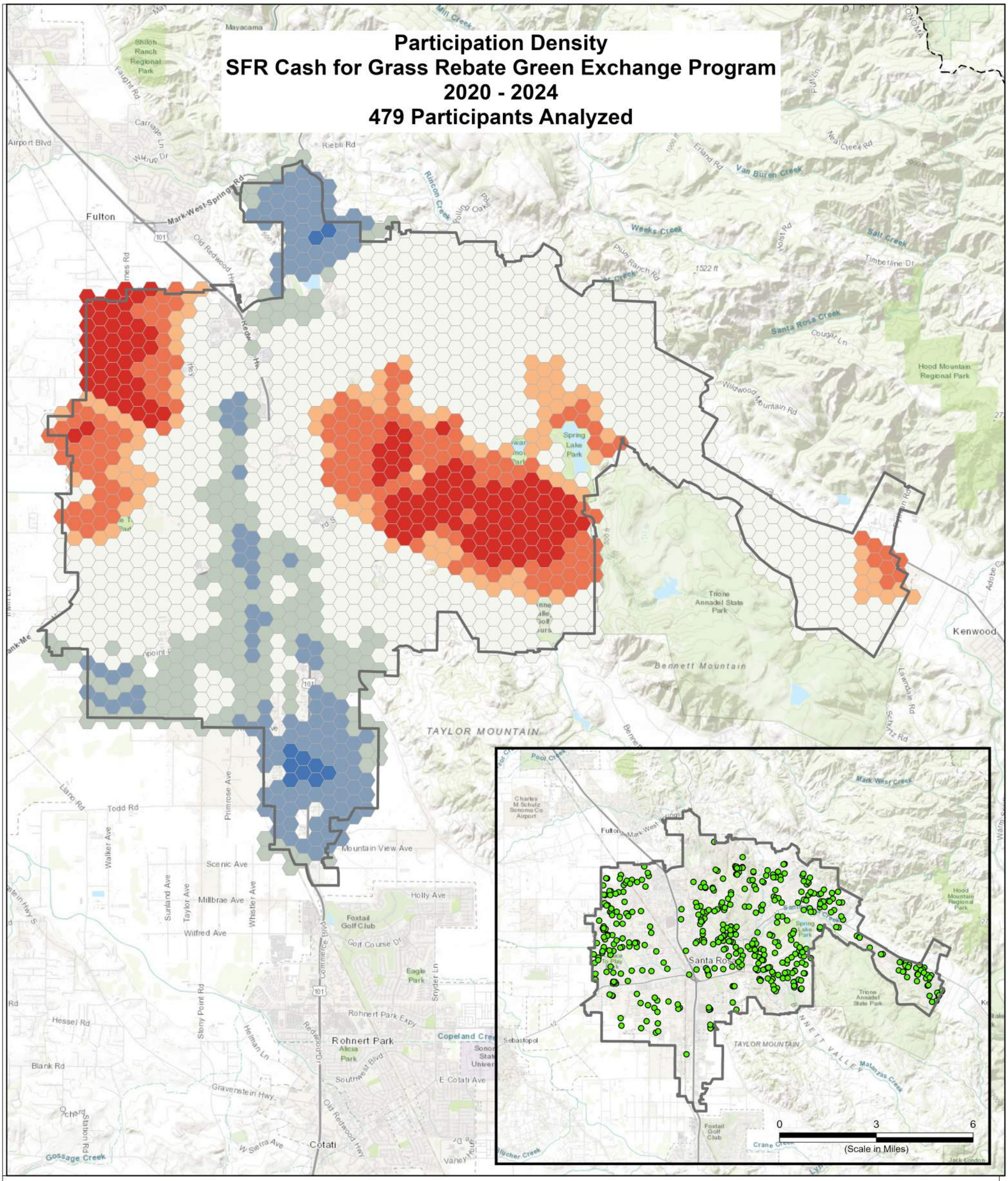
- Areas of high participation are observed in the eastern edge (i.e., Oakmont), southeastern (i.e., Montgomery-Bennet Valley area), and western portions of the City; and
- Areas of low participation in the Fountaingrove area and from downtown to the southern boundary.

The SFR Cash for Grass Rebate Green Exchange Program, however, had higher participation in the northwestern portions of the City but less participation in the eastern Oakmont area than the SFR WaterSmart Check-up (Outdoor) Program, which also targets outdoor water use.

Figure 4-6 through **Figure 4-8** show the results of the participation density analysis for the CII and MFR Cash for Grass Rebate Green Exchange Program, CII WaterSmart Check-up (Indoor) Program, and the CII and MFR WaterSmart Check-up (Outdoor) Program. These programs show a similar pattern of participation, with areas of higher participation in the northwestern commercial hub and the downtown area. The CII WaterSmart Check-up (Indoor) Program had higher participation in the downtown area than programs that target outdoor water use.

The 2020-2024 participation for the three SFR programs and the CII and MFR Cash for Grass Rebate Green Exchange Program are similar to those prior to 2020 (EKI, 2020). Based on these analyses, the City could consider targeting program outreach for SFR programs to portions of its service area with historically low participation, particularly in the northern and southern portions of the City with higher levels per-unit residential water use as shown on **Figure 3-10**.

Participation Density
SFR Cash for Grass Rebate Green Exchange Program
2020 - 2024
479 Participants Analyzed



Legend

Service Area Boundary

Participation Hot and Cold Spots

- Cold Spot with 99% Confidence
- Cold Spot with 95% Confidence
- Cold Spot with 90% Confidence
- Not Significant
- Hot Spot with 90% Confidence
- Hot Spot with 95% Confidence
- Hot Spot with 99% Confidence

Program Participation

- SFR Cash for Grass Rebate Green Exchange Program

Abbreviations

CII = commercial, industrial, and institutional
MFR = multi-family residential
SFR = single family residential

Notes

1. All locations are approximate.
2. Program participation hot and cold spots were evaluated using the Esri ArcGIS Pro 3.4 Optimized Hot Spot Analysis tool, which calculates a Getis-Ord Gi* statistic. This statistic is a measure of the spatial distribution of incidents (participation) relative to a random, equally-spaced distribution.
3. Participants included in this analysis are limited to those for which detailed participation records and location data are available.

Sources

1. Water use efficiency program data provided by City of Santa Rosa on April 2025.
2. Basemaps provided by ESRI.

N

0 1.25 2.5
(Scale in Miles)

DRAFT

Participation Density for SFR Cash for Grass Rebate Green Exchange Program

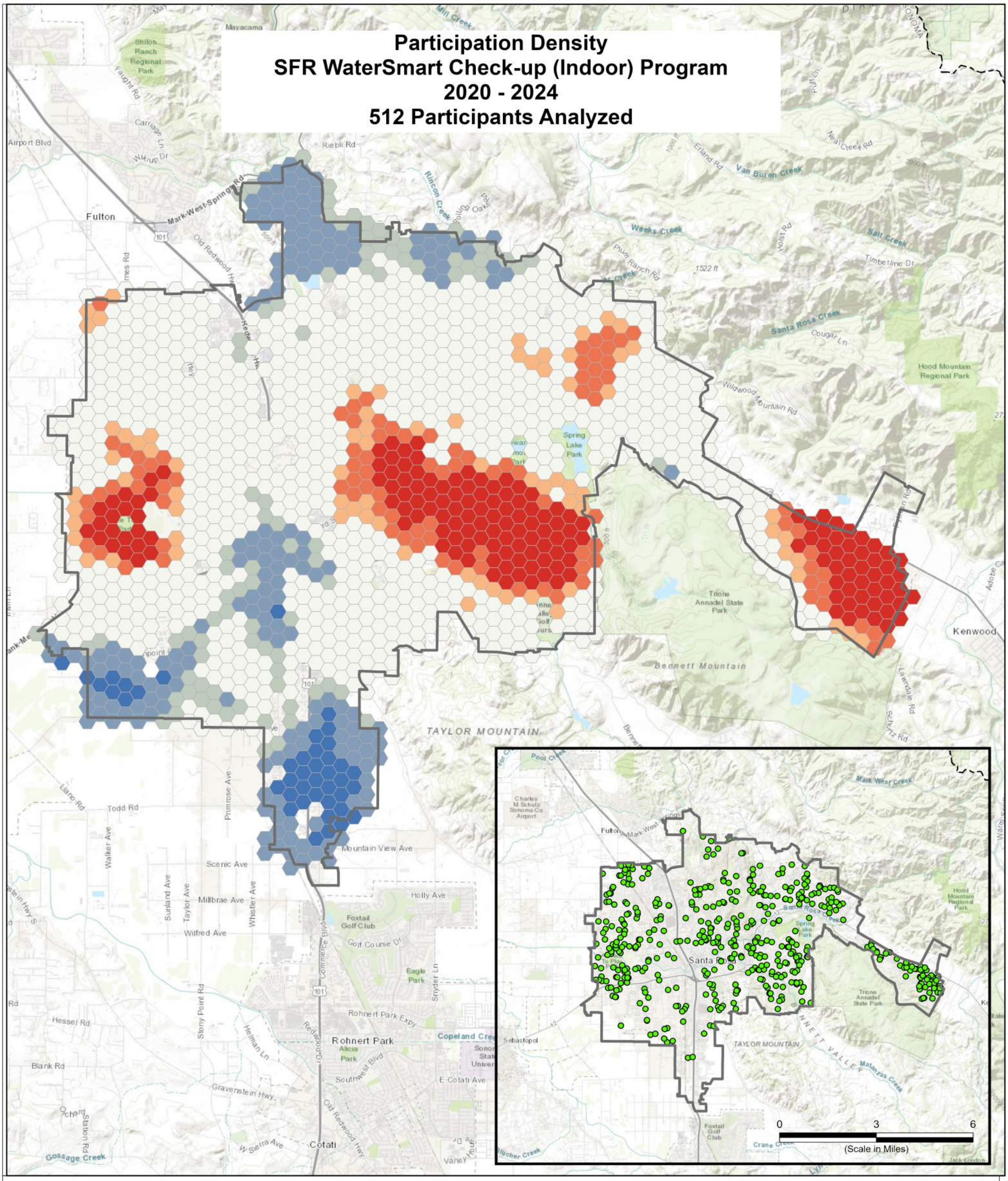
City of Santa Rosa, CA
October 2025
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Figure 4-3

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Participation Density
SFR WaterSmart Check-up (Indoor) Program
2020 - 2024
512 Participants Analyzed



Legend

Service Area Boundary

Participation Hot and Cold Spots

- Cold Spot with 99% Confidence
- Cold Spot with 95% Confidence
- Cold Spot with 90% Confidence
- Not Significant
- Hot Spot with 90% Confidence
- Hot Spot with 95% Confidence
- Hot Spot with 99% Confidence

Program Participation

- SFR WaterSmart Check-up (Indoor) Program

Abbreviations

CII = commercial, industrial, and institutional
MFR = multi-family residential
SFR = single family residential

Notes

1. All locations are approximate.
2. Program participation hot and cold spots were evaluated using the Esri ArcGIS Pro 3.4 Optimized Hot Spot Analysis tool, which calculates a Getis-Ord Gi* statistic. This statistic is a measure of the spatial distribution of incidents (participation) relative to a random, equally-spaced distribution.
3. Participants included in this analysis are limited to those for which detailed participation records and location data are available.

Sources

1. Water use efficiency program data provided by City of Santa Rosa on April 2025.
2. Basemaps provided by ESRI.

N

0 1.25 2.5

(Scale in Miles)

DRAFT

Participation Density for SFR WaterSmart Check-up (Indoor) Program

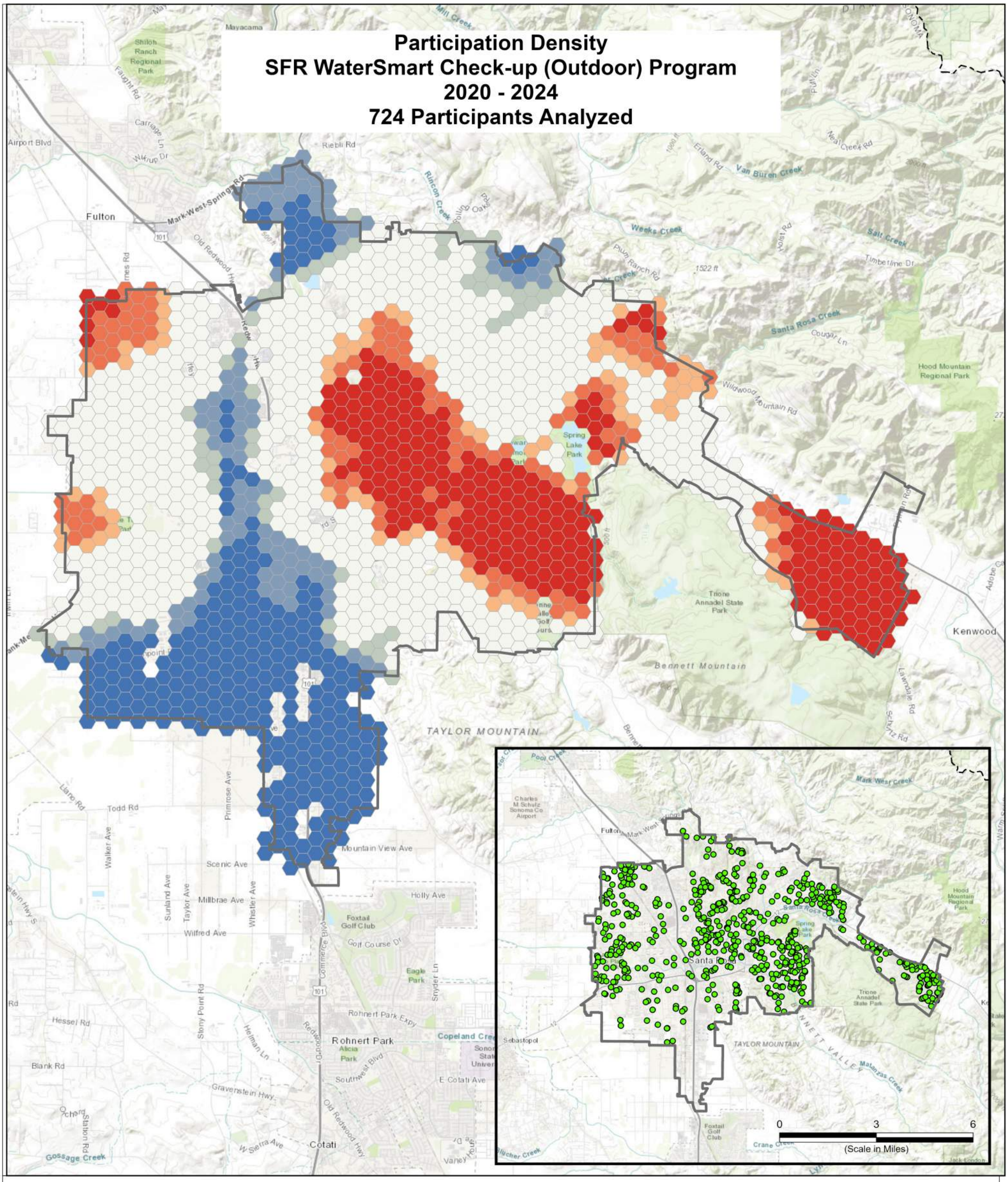
City of Santa Rosa, CA
October 2025
C40180.00

Figure 4-4

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Participation Density
SFR WaterSmart Check-up (Outdoor) Program
2020 - 2024
724 Participants Analyzed



Legend

Service Area Boundary

Participation Hot and Cold Spots

- Cold Spot with 99% Confidence
- Cold Spot with 95% Confidence
- Cold Spot with 90% Confidence
- Not Significant
- Hot Spot with 90% Confidence
- Hot Spot with 95% Confidence
- Hot Spot with 99% Confidence

Program Participation

- SFR WaterSmart Check-up (Outdoor) Program

Abbreviations

CII = commercial, industrial, and institutional
MFR = multi-family residential
SFR = single family residential

Notes

1. All locations are approximate.
2. Program participation hot and cold spots were evaluated using the Esri ArcGIS Pro 3.4 Optimized Hot Spot Analysis tool, which calculates a Getis-Ord Gi* statistic. This statistic is a measure of the spatial distribution of incidents (participation) relative to a random, equally-spaced distribution.
3. Participants included in this analysis are limited to those for which detailed participation records and location data are available.

Sources

1. Water use efficiency program data provided by City of Santa Rosa on April 2025.
2. Basemaps provided by ESRI.

N

0 1.25 2.5

(Scale in Miles)

DRAFT

Participation Density for SFR WaterSmart Check-up (Outdoor) Program

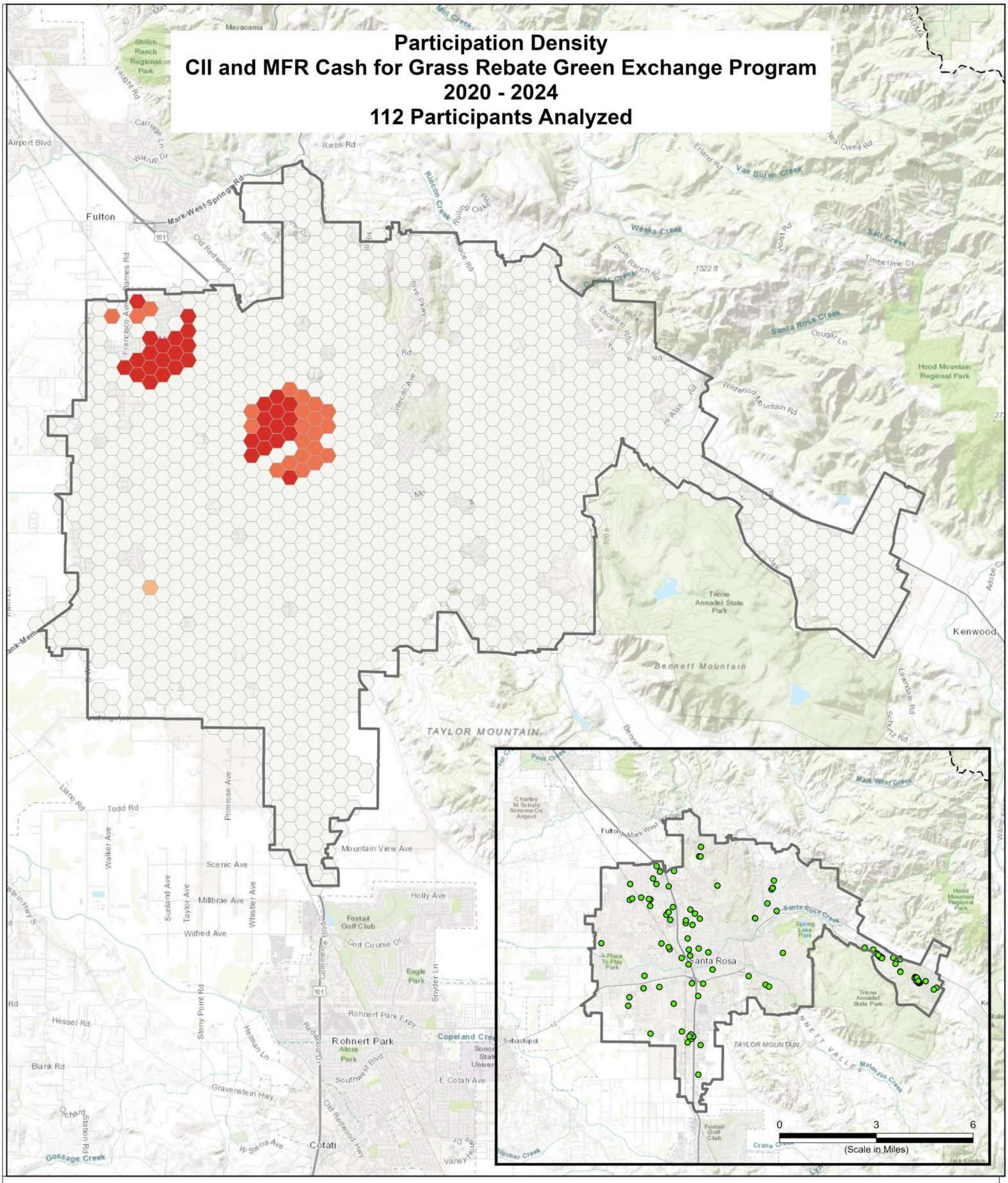
City of Santa Rosa, CA
October 2025
C40180.00

Figure 4-5

eki environment & water

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Participation Density
CII and MFR Cash for Grass Rebate Green Exchange Program
2020 - 2024
112 Participants Analyzed



Legend

Service Area Boundary

Participation Hot and Cold Spots

- Cold Spot with 99% Confidence
- Cold Spot with 95% Confidence
- Cold Spot with 90% Confidence
- Not Significant
- Hot Spot with 90% Confidence
- Hot Spot with 95% Confidence
- Hot Spot with 99% Confidence

Program Participation

- CII and MFR Cash for Grass Rebate Green Exchange Program

Abbreviations

CII = commercial, industrial, and institutional
MFR = multi-family residential
SFR = single family residential

Notes

1. All locations are approximate.
2. Program participation hot and cold spots were evaluated using the Esri ArcGIS Pro 3.4 Optimized Hot Spot Analysis tool, which calculates a Getis-Ord Gi* statistic. This statistic is a measure of the spatial distribution of incidents (participation) relative to a random, equally-spaced distribution.
3. Participants included in this analysis are limited to those for which detailed participation records and location data are available.

Sources

1. Water use efficiency program data provided by City of Santa Rosa on April 2025.
2. Basemaps provided by ESRI.

N

0 1.25 2.5

(Scale in Miles)

DRAFT

Participation Density for CII and MFR Cash for Grass Rebate Green Exchange Program

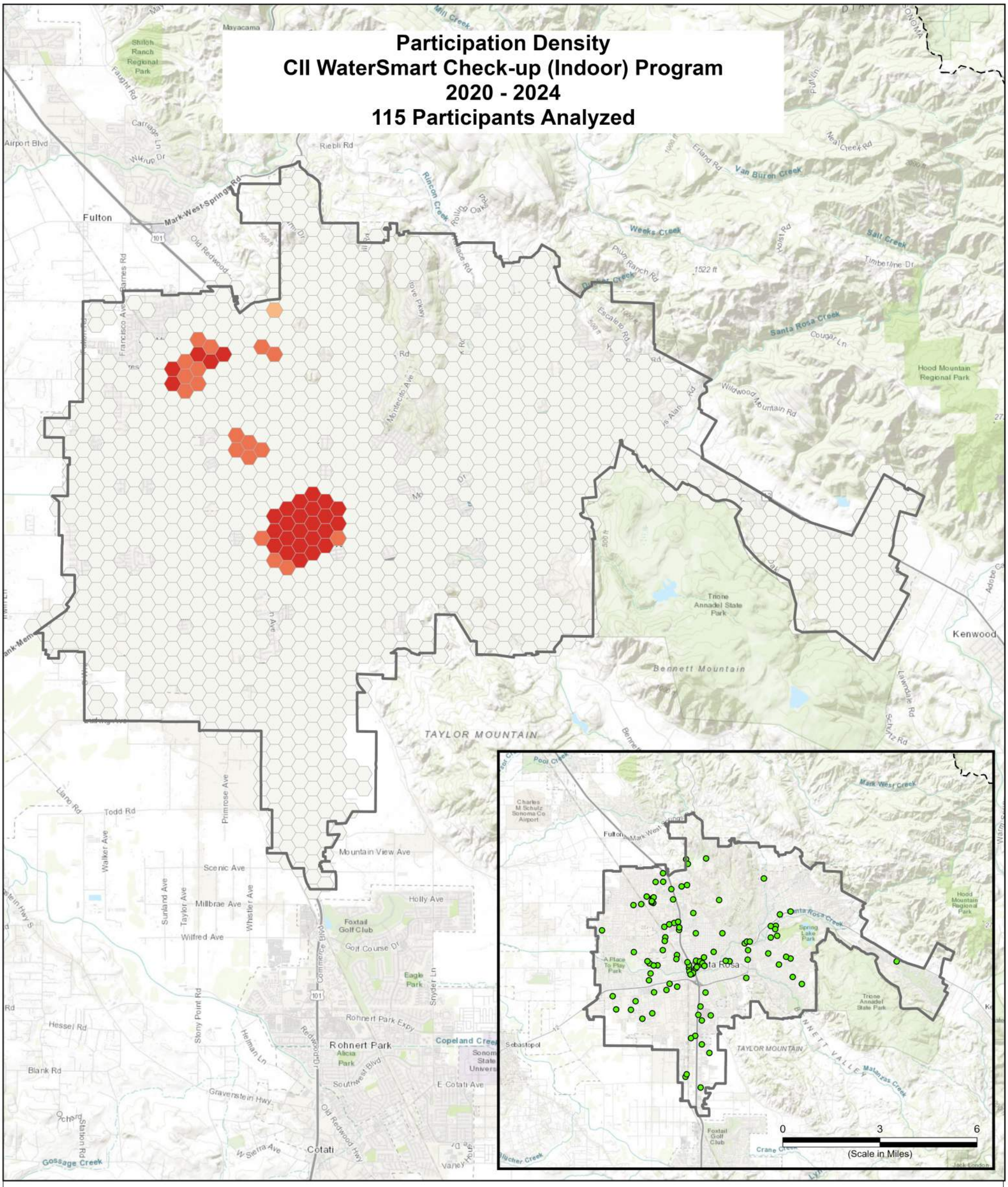
City of Santa Rosa, CA
October 2025
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Figure 4-6

eki environment & water

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Participation Density
CII WaterSmart Check-up (Indoor) Program
2020 - 2024
115 Participants Analyzed



Legend

- Service Area Boundary

Participation Hot and Cold Spots

- Cold Spot with 99% Confidence
- Cold Spot with 95% Confidence
- Cold Spot with 90% Confidence
- Not Significant
- Hot Spot with 90% Confidence
- Hot Spot with 95% Confidence
- Hot Spot with 99% Confidence

Program Participation

- CII WaterSmart Check-up (Indoor) Program

Abbreviations

CII = commercial, industrial, and institutional
MFR = multi-family residential
SFR = single family residential

Notes

1. All locations are approximate.
2. Program participation hot and cold spots were evaluated using the Esri ArcGIS Pro 3.4 Optimized Hot Spot Analysis tool, which calculates a Getis-Ord Gi* statistic. This statistic is a measure of the spatial distribution of incidents (participation) relative to a random, equally-spaced distribution.
3. Participants included in this analysis are limited to those for which detailed participation records and location data are available.

Sources

1. Water use efficiency program data provided by City of Santa Rosa on April 2025.
2. Basemaps provided by ESRI.

N

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(Scale in Miles)

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Participation Density for CII WaterSmart Check-up (Indoor) Program

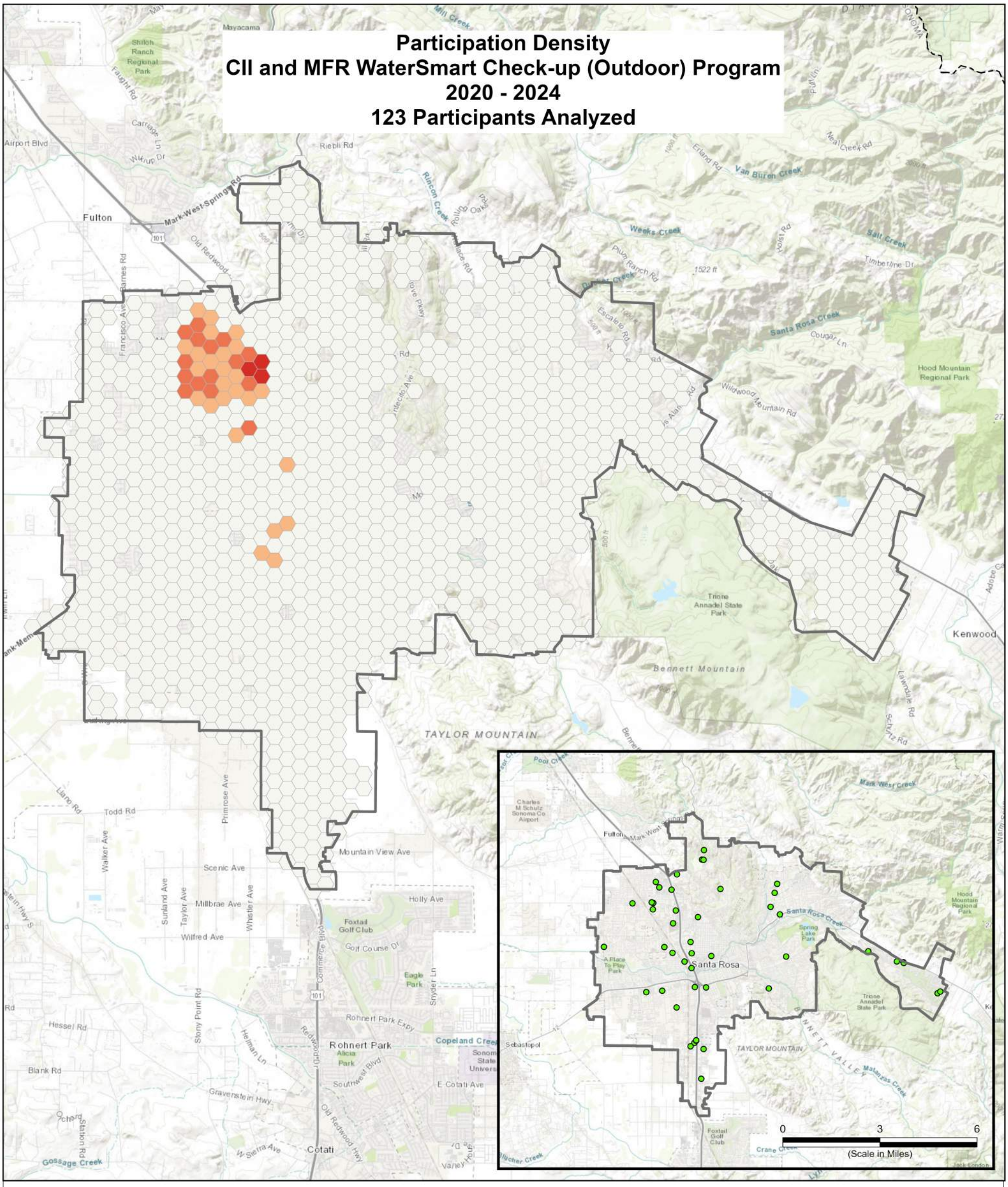
City of Santa Rosa, CA
October 2025
C40180.00

Figure 4-7

eki environment & water

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Participation Density
CII and MFR WaterSmart Check-up (Outdoor) Program
2020 - 2024
123 Participants Analyzed



Legend

Service Area Boundary

Participation Hot and Cold Spots

- Not Significant
- Hot Spot with 90% Confidence
- Hot Spot with 95% Confidence
- Hot Spot with 99% Confidence

Program Participation

- CII and MFR WaterSmart Check-up (Outdoor) Program

Abbreviations
CII = commercial, industrial, and institutional
MFR = multi-family residential
SFR = single family residential

Notes
1. All locations are approximate.
2. Program participation hot and cold spots were evaluated using the Esri ArcGIS Pro 3.4 Optimized Hot Spot Analysis tool, which calculates a Getis-Ord Gi* statistic. This statistic is a measure of the spatial distribution of incidents (participation) relative to a random, equally-spaced distribution.
3. Participants included in this analysis are limited to those for which detailed participation records and location data are available.

Sources
1. Water use efficiency program data provided by City of Santa Rosa on April 2025.
2. Basemaps provided by ESRI.

N

0 1.25 2.5
(Scale in Miles)

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Participation Density for CII and MFR WaterSmart Check-up (Outdoor) Program

City of Santa Rosa, CA
October 2025
C40180.00

Figure 4-8

eki environment & water

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4.5 Building Stock Characteristics

Certain characteristics related to building age can influence, or at least be correlated with, water use. In general, older homes and businesses tend to have higher water using fixtures that were installed prior to passage of key changes to the Federal and California Plumbing, Energy, and Building Codes; these accounts present an opportunity for increasing water conservation. Homes and businesses with larger landscaped areas tend to use more water volumetrically than those with smaller landscaped areas. Similarly, larger homes may have more occupants and therefore more water use.

To assess the distribution of housing stock and other key water use characteristics, service area-wide data were evaluated based on Sonoma County Assessor parcel data. This data included lot sizes and building construction date for residential program participants. Building construction data for parcels within the City based on Sonoma County Assessor data is shown on **Figure 4-9**. This figure shows parcels for all land use types for which building construction date is available (e.g., residential, commercial, open space, etc.).

Building stock characteristics of conservation program participants for each of the six selected programs between 2020 and 2024 are summarized in **Table 4-12**.[10] As discussed above, this analysis focuses on participation over the past five years and serves as an update to the 2020 Report for the four programs that were analyzed previously. The first chart shows the total number of participants by program by age of building construction, while the second chart shows the results after controlling for the relative number of parcels within each age category.

The average year of building construction for participants in each program ranged from 1965 to 1987. For all conservation programs, the majority of program participants 2020-2024 are in buildings built prior to 1994. When the results are normalized based on total building stock, SFR participants in pre-1994 homes, MFR participants in 1994-2009 buildings, and CII participants in newer buildings had higher rates of participation. While participation among CII and MFR customers differs more noticeably by building age, SFR customer participation in conservation programs is relatively consistent across all home age ranges.

When compared to program participation data prior to 2020 (EKI, 2020), the City appears to have reached more SFR customers in pre-1994 homes over the recent years. There was a significant increase in CII participants in 1994-2009 buildings of the CII and MFR Cash for Grass Rebate Green Exchange Program. There remains opportunity to increase participation in the CII and MFR programs in pre-1994 buildings.

4.6 Demographic Characteristics of Residential Conservation Program Participation

Residential conservation programs are open to all residents in the City service area. Although the programs are available to all residents, those with certain demographic characteristics tend to participate at higher rates than others in some programs. The analyses described in the following sections were performed for the five selected programs in order to better understand trends in

[10] Results for CII and MFR participants are shown separately, given the diversity of building stock.

customer demographics among residential conservation program participants in the City – specifically, income, whether the home occupants rent or own the property, and household age.

4.6.1 Household Income Trends

Household income data were based on the estimated median household income by Census Block Group (U.S. Census Bureau, 2024).[11] The following sections discuss the breakdown of program participation in residential programs by income classification. These income levels are defined as follows: low income (<$80,550/year), moderate income ($80,550 - $122,950), and high income (>$122,950), based on Sonoma County income designations for a two-person household (HCD, 2023). Given that these classifications reflect the median of all households in a given Census Block Group, this reflects the predominant income for that area (neighborhood) but does not mean that every participant or household in that area falls within the same income group.

Figure 4-10 shows the distribution of income groups across the service area and **Table 4-13** shows the distribution of residential program participants by income level. The first chart in **Table 4-13** shows the percentage of participants in each program that live in areas of each income level grouping for residential program participants only. The second chart on **Table 4-13** shows participation rates controlled for the number of parcels within the service area within each income group. Participation varied among conservation programs, with greater participation occurring in the medium income level for the MFR Cash for Grass Rebate Green Exchange Program[12] and greater participation in the higher income level for all other programs.

When compared to program participation data prior to 2020 (EKI, 2020), the City appears to have reached higher income households over the recent years that had lower participation in the past. There remain opportunities to increase program participation for higher income households in the CII and MFR Cash for Grass Program, as well as for lower income households in the SFR programs.

4.6.2 Homeownership Trends

In order to evaluate whether home ownership appears to be a driving factor in program participation, residential program participation was compared to the proportion of the population that live in renter-occupied homes, based on Census data. Rentership status was based on Census estimates of the population within a Census Block Group that live in a renter-occupied home versus an owner-occupied home (U.S. Census Bureau, 2024). Rentership is thus presented as the proportion of the population within a Census Block Group that lives in a renter-occupied home. A Census Block Group with a rentership of less than 25% indicates that the area consists primarily of owner-occupied homes, while a rentership population of greater than 75% indicates that the area is predominantly made up of those who rent their homes.

Figure 4-11 shows the distribution of renter-occupancy rate across the City. **Table 4-14** shows the distribution of residential program participation by the percentage of the population that live in renter-occupied homes (rentership) for residential program participants only. The first chart in

[11] Census Block Group is the smallest geographical unit for which the United States Census Bureau publishes income data.
[12] While both CII and MFR customers are targeted by this program, only MFR customers were considered in this analysis.

Table 4-14 shows the percentage of participants in each program that live in areas of each percent rentership grouping. The second chart in **Table 4-14** shows participation rates controlled for the number of customers within the City that fall within each rentership classification. Participation in conservation programs was generally higher in Census Block Groups with a lower percentage of rentership (high home ownership) for the SFR programs, in the low to moderate rentership for the MFR Cash for Grass Rebate Green Exchange Program, and in the moderate to high rentership for the MFR WaterSmart Check-up (Outdoor) Program.

These results are generally consistent with the results observed with pre-2020 program participation data (EKI, 2020), which suggest that the highest participation in several programs occurs generally by customers who own their homes. There remain opportunities to increase participation by targeting areas of higher rentership, particularly for the SFR programs and the MFR Cash for Grass Rebate Green Exchange Program.

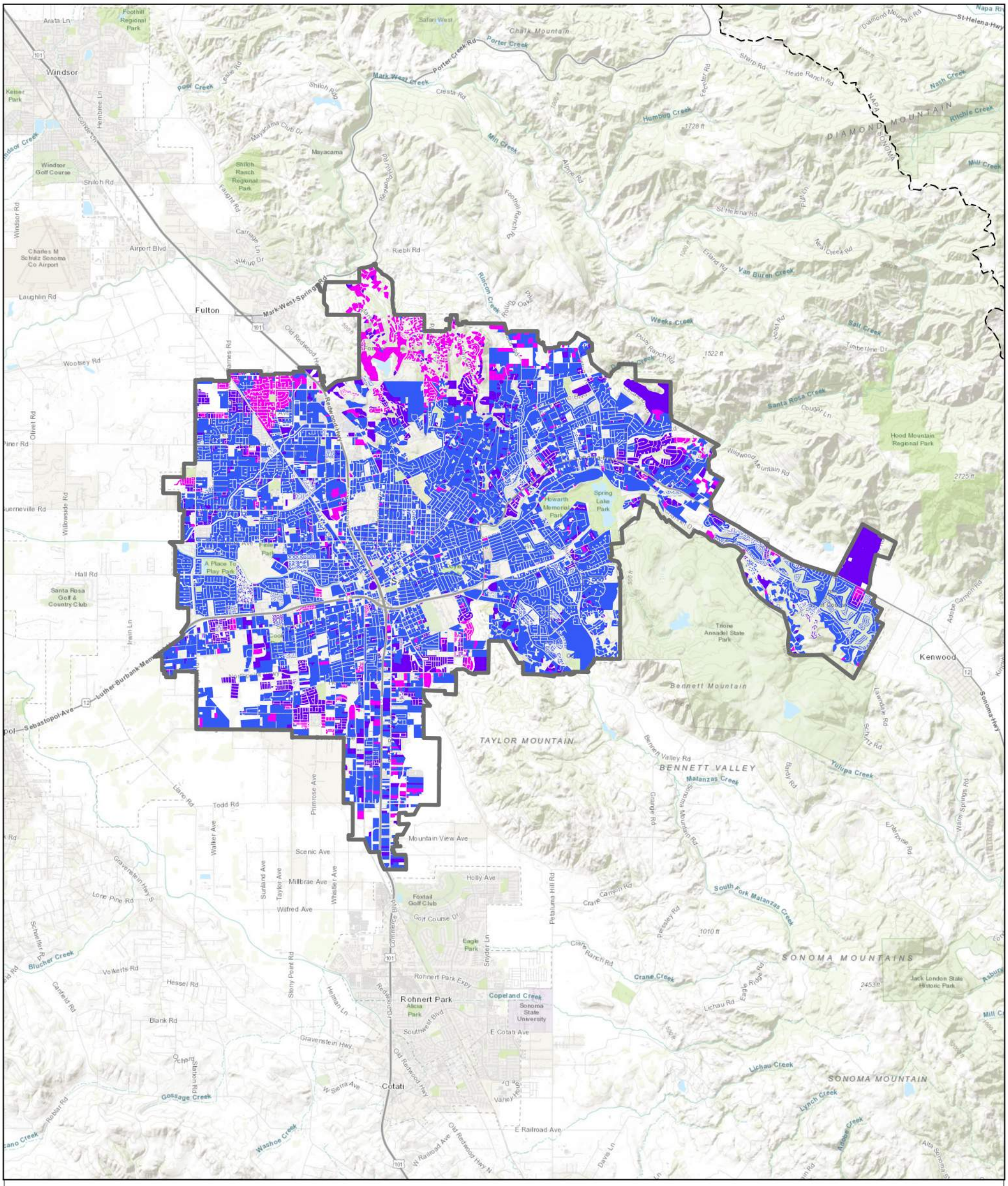
4.6.3 Household Age Trends

Median household age is based on Census estimates of the median age of household members by Census Block Group (U.S. Census Bureau, 2024). Median age is broken up as follows: <35 years old, 35-45 years old, 45-55 years old, and >55 years old. Given that these classifications reflect the median age of all household members in a given Census Block Group, this reflects the predominant age for that area but does not mean that every participant or household in that area falls within the same age group.

Figure 4-12 shows the distribution of median household age by Census Block Group across the service area and **Table 4-15** shows the distribution of residential program participants by age group for residential program participants only. The first chart in **Table 4-15** shows the percentage of participants in each program that live in areas of each household age grouping. The second chart in **Table 4-15** shows participation rates controlled for the number of parcels within the service area within each median household age group.

The SFR programs and the MFR Cash for Grass Rebate Green Exchange Program appear to have low participation by customers in the youngest age group and high participation by customers in the oldest age group. Participants in the MFR WaterSmart Check-up (Outdoor) Program were relatively evenly distributed between age groups (<5% relative difference across all age groups).

These results are generally consistent with the results observed with pre-2020 program participation data (EKI, 2020) and suggest that the City could benefit from targeting younger age groups for the SFR programs and the MFR Cash for Grass Rebate Green Exchange Program, particularly those who are 35 years of age or younger.



Legend

County Boundaries

Service Area Boundary

Year Built

Before 1994 (40,119 parcels)

1994 - 2009 (9,108 parcels)

2010 and newer (5,001 parcels)

Notes

1. All locations are approximate.
2. Construction date for Sonoma County parcels is based on the year the primary building was constructed, per Source 1.

Sources

1. Sonoma County, 2025. Sonoma County Assessor Parcel Data, Provided via City of Santa Rosa, 6 May 2025.
2. Basemap provided by ESRI.

N

0 1.5 3

(Scale in Miles)

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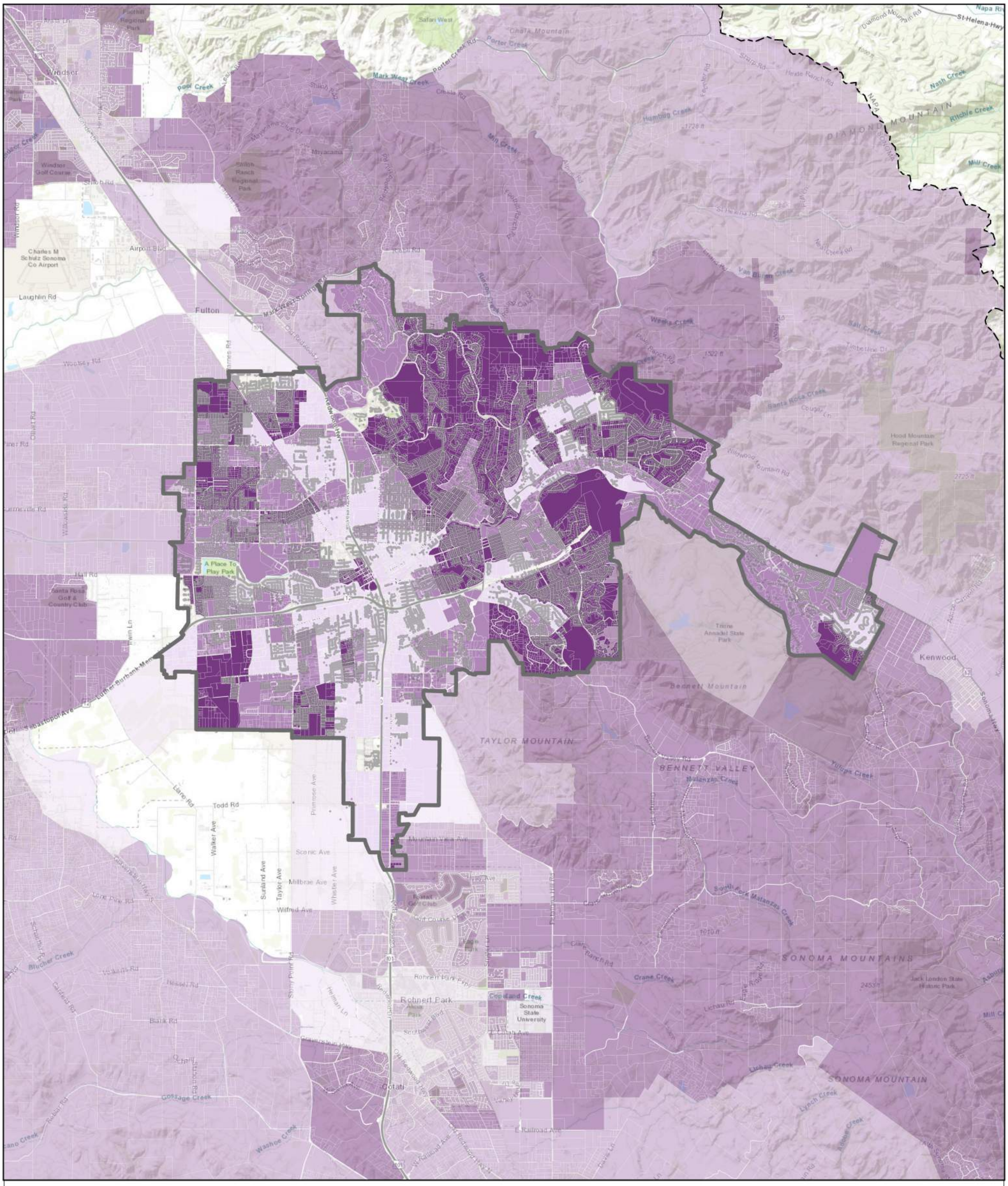
Age of Building Stock

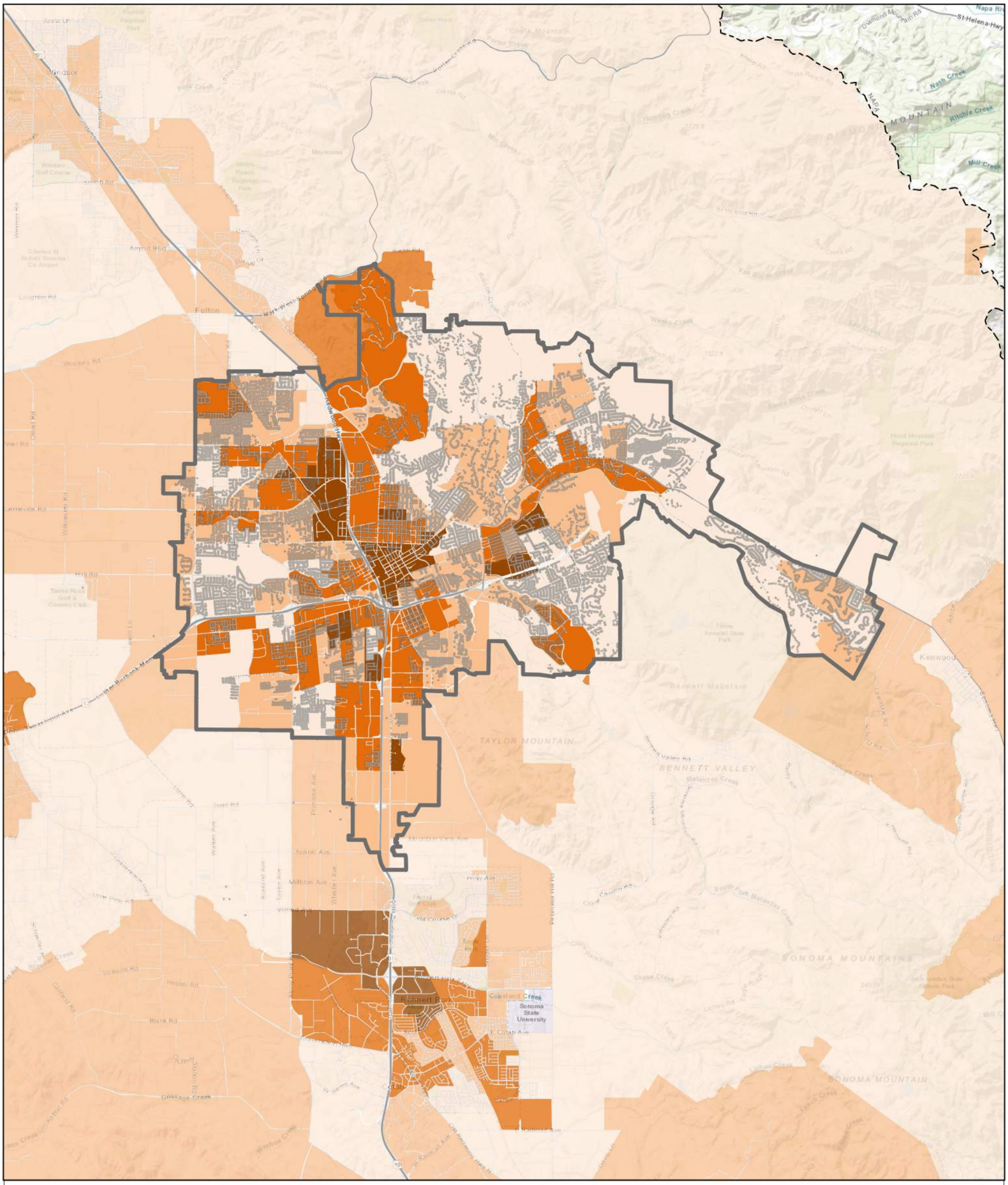
City of Santa Rosa, CA
October 2025
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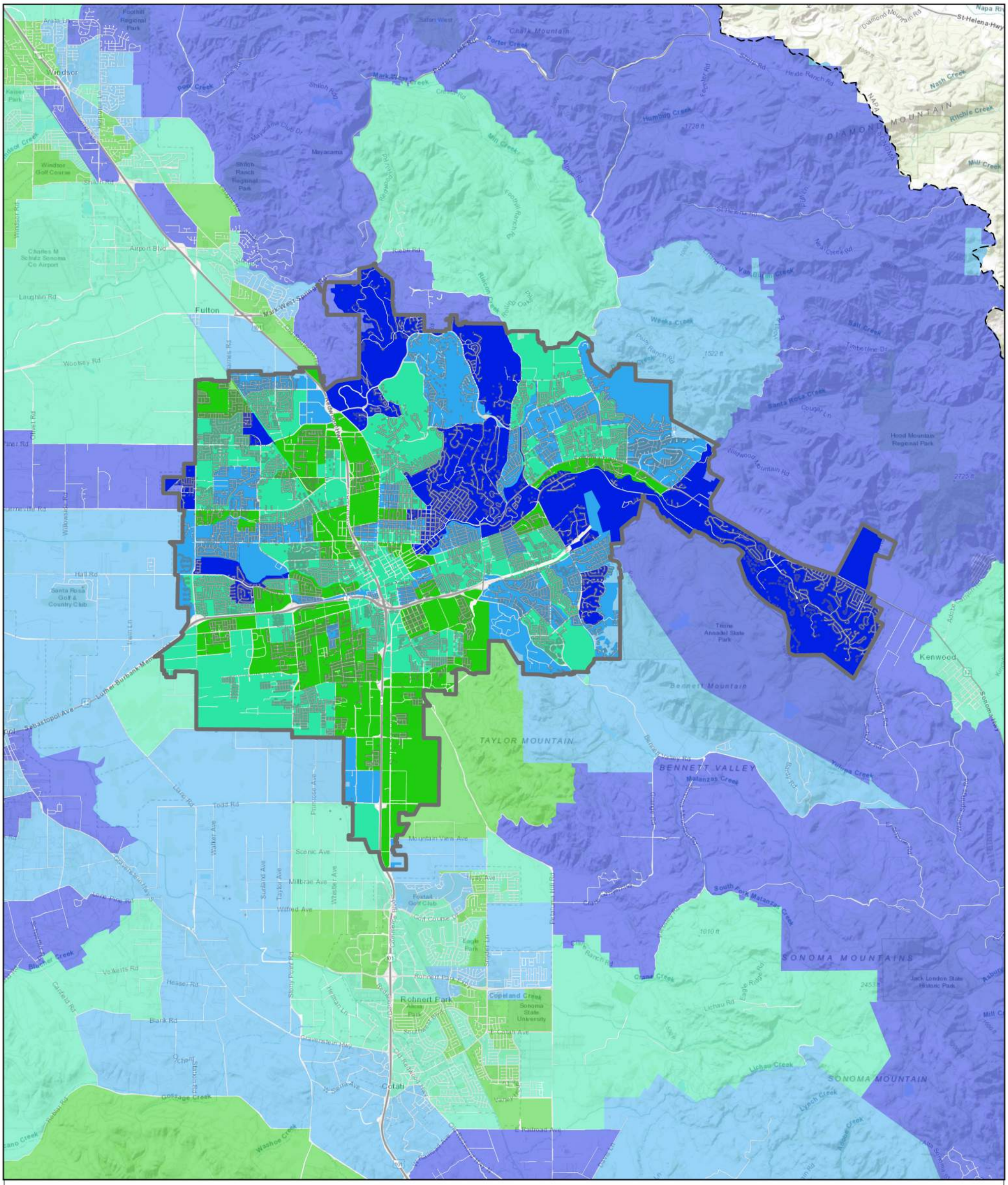
Figure 4-9

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Windsor
Pool Creek
Mark West Creek
Porter Creek Rd
Chalk Mountain
Porter Creek
Sharp Rd
Horse Ranch Rd
Nash Creek
Ritchie Creek
Mill Creek
Hamlug Creek
1728 ft
DIAMOND MOUNTAIN
Foothill Regional Park
Windsor Golf Course
Shiloh Ranch Regional Park
Shiloh Rd
Windsor Rd
Charles M Schulz Sonoma Co Airport
Airport Blvd
Laughlin Rd
Fulton
Mark West Springs Rd
Old Redwood Hwy
Wood Creek
Van Ruiten Creek
1522 ft
Salt Creek
Santa Rosa Creek
Cougar Ln
Hood Mountain Regional Park
2725 ft
Wikiup
Wallace Rd
Olivet Rd
Petaluma Hill Rd
Roblar Rd
A Place To Play Park
Hall Rd
Santa Rosa Golf & Country Club
Twin Ln
Luther Burbank Memorial Pkwy
Thine Annadel State Park
Kenwood
Bennett Mountain
TAYLOR MOUNTAIN
BENNETT VALLEY
Yulupa Creek
Matanzas Creek
Llano Rd
Todd Rd
Walker Ave
Primrose Ave
Scenic Ave
Sunland Ave
Taylor Ave
Millbrae Ave
Wilfred Ave
Whiler Ave
Fountaingrove Golf Club
Rohnert Park Expy
Rohnert Park
Cleveland Creek
Sonoma State University
Petaluma Hill Rd
Stony Point Rd
Hearn Ave
Bodega Ave
Bodega Hwy
Bloomfield Rd
Bloomfield Rd
Bodega Hwy
Cotati
Railroad Ave
Old Redwood Hwy
Cotati Creek
Cotati Station Rd
Cottage Creek
Washoe Creek
Blucher Creek
Bodega Hwy
Middle Two Rock Rd
Bodega Hwy
Lone Pine Rd
Bodega Hwy
Middle Two Rock Rd
Bodega Hwy
Bodega Hwy
Middle Two Rock Rd
Bodega Hwy
Middle Two Rock Rd
Bodega Hwy
Middle Two Rock Rd


Windsor
Fulton
Airport Blvd
Shiloh Rd
Laughlin Rd
Wohler Rd
Mark West Springs Rd
Old Redwood Hwy
Todd Rd
Scenic Ave
Mihran Ave
Petaluma Hill Rd
Roberts Rd
Bellevue Ave
Fisher Park
Copeland Creek
Sonoma State University
E Cotati Ave
Cotati
Rohnert Park
Bennett Valley Rd
Matanzas Creek
South Fork Matanzas Creek
Crane Creek
Lichau Rd
Kenwood
Bennett Mountain
TAYLOR MOUNTAIN
BENNETT VALLEY
SONOMA MOUNTAINS
SONOMA MOUNTAIN
Hood Mountain Regional Park
Trione Annadel State Park
Sugarloaf Ridge State Park
Santa Rosa Golf & Country Club
Windsor Golf Course
Charles M. Schulz Sonoma Co Airport
Oakmont Golf Club
Fairfield Golf Club
Diamond Mountain Rd
St Helena Hwy
NAPA MOUNTAIN
Nash Creek
Ritchie Creek
Mill Creek
Porter Creek
Matanzas Creek
Washoe Creek
Brush Creek
Windsor Creek
Copeland Creek
Crane Creek
Lichau Creek
Lynch Creek
Adobe Canyon Rd
Arata Ln
Starr Rd
Hall Rd
Wood Rd
Occidental Rd
Gilbert Rd
Wilfred St
Petaluma Hill Rd
Walker Ave
Stanford Ave
Thayer Ave
Wheeler Ave
Primrose Ave
Piner Rd
Todd Rd
Scenic Ave
Mihran Ave
Petaluma Hill Rd
Bellevue Ave
Roberts Rd
Bodway Pkwy
Rohnert Park Expy
Stony Point Rd
Old Redwood Hwy
Commerce Blvd
Redwood Dr
Hessel Rd
Blank Rd
Cleveland Ave
Wilfred St
Petaluma Hill



Legend

- County Boundaries
- Service Area Boundary
- Residential Customers

Median Household Age

- <35
- 35-45
- 45-55
- >55

N

0 1.5 3

(Scale in Miles)

Notes

1. All locations are approximate.
2. Household age is based on estimated 2023 median age of household members by Census Block Group (U.S. Census Bureau, 2024).

Sources

1. U.S. Census Bureau, 2024. 2019-2023 American Community Survey (ACS) 5-year estimates. TIGER/Line Shapefiles by Block Group, https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html, United States Census Bureau.
2. Basemap provided by ESRI.

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Median Household Age

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October 2025
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Figure 4-12

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Table 4-11 Building Stock Characteristics by Program Participants

City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Water Efficiency Program (a)	Sector	Avg Year Built	Avg Lot Size (sq ft)	Avg Lot Size (ac)	Year of Construction		
					pre-1994	1994-2009	2010 and Later
Cash for Grass Rebate Green Exchange Program	SFR	1976	9,032	0.21	78%	19%	3%
WaterSmart Check-up (Indoor) Program	SFR	1979	8,903	0.20	74%	17%	8%
WaterSmart Check-up (Outdoor) Program	SFR	1979	9,959	0.23	73%	17%	10%
Cash for Grass Rebate Green Exchange Program	CII	1981	13,758	0.32	71%	24%	6%
	MFR	1975	35,112	0.81	75%	25%	0%
WaterSmart Check-up (Indoor) Program	CII	1984	48,875	1.12	66%	23%	11%
WaterSmart Check-up (Outdoor) Program	CII	1987	8,925	0.20	81%	0%	19%
	MFR	1965	9,374	0.22	73%	27%	0%

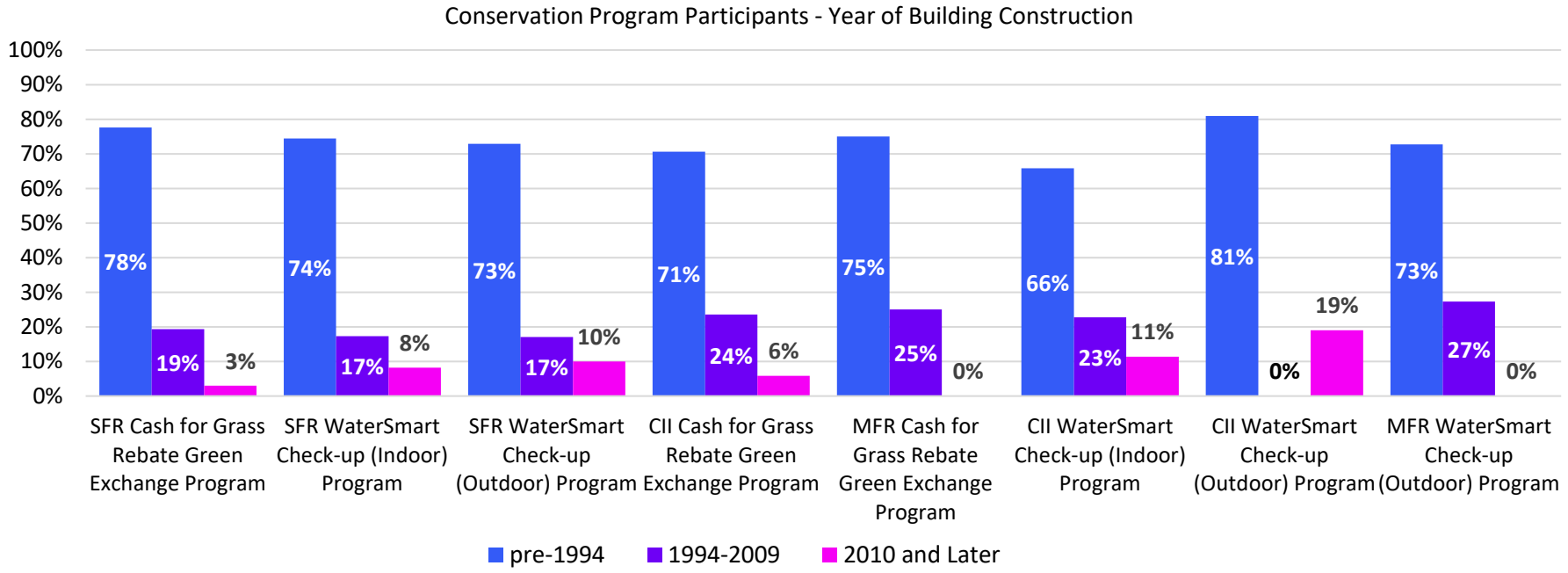
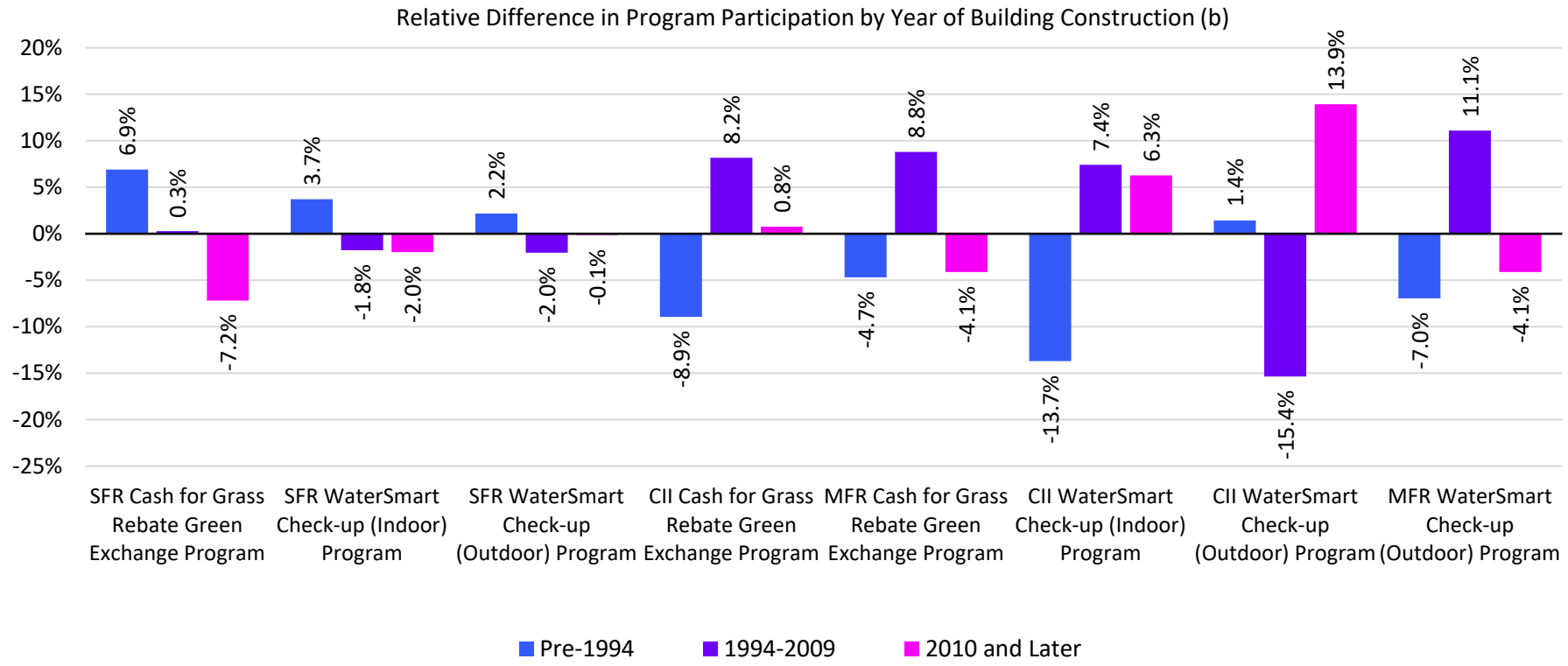


Table 4-11 Building Stock Characteristics by Program Participants

City of Santa Rosa, Sonoma-Marin Saving Water Partnership



Abbreviations:

ac = acre
avg = average
CII = commercial, industrial, and institutional
MFR = multi-family residential
SFR = single family residential
sq ft = square feet

Notes:

(a) Program participants included in this analysis are limited to those for which relevant parcel data are available (Sonoma County, 2025).

(b) Relative difference is calculated as the percentage of program participation by year of construction minus the overall percentage of residential customers by year of construction within the service area.

Table 4-12 Residential Customer Program Participation by Median Household Income
City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Median Household Income (a)		Percentage of Residential Customers in Santa Rosa (b)	Percentage of Participating Residential Customers, 2020-2024 (b)				
			SFR Cash for Grass Rebate Green Exchange Program	SFR WaterSmart Check-up (Indoor) Program	SFR WaterSmart Check-up (Outdoor) Program	MFR Cash for Grass Rebate Green Exchange Program (c)	CII WaterSmart Check-up (Indoor) Program
Low Income	<$80,550	29%	10%	18%	15%	14%	15%
Moderate Income	$80,550 - $122,950	45%	35%	31%	30%	78%	30%
High Income	>$122,950	25%	54%	51%	55%	8%	55%

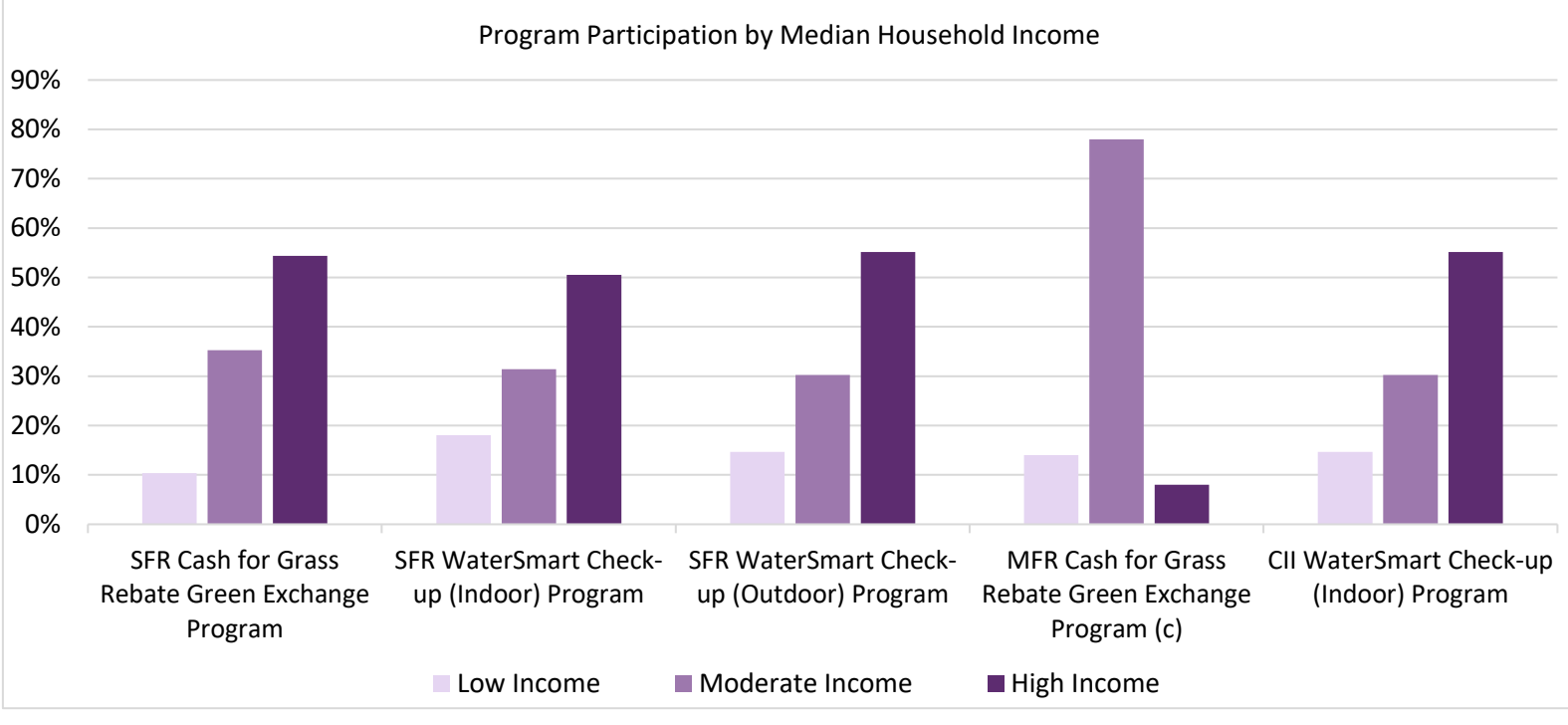
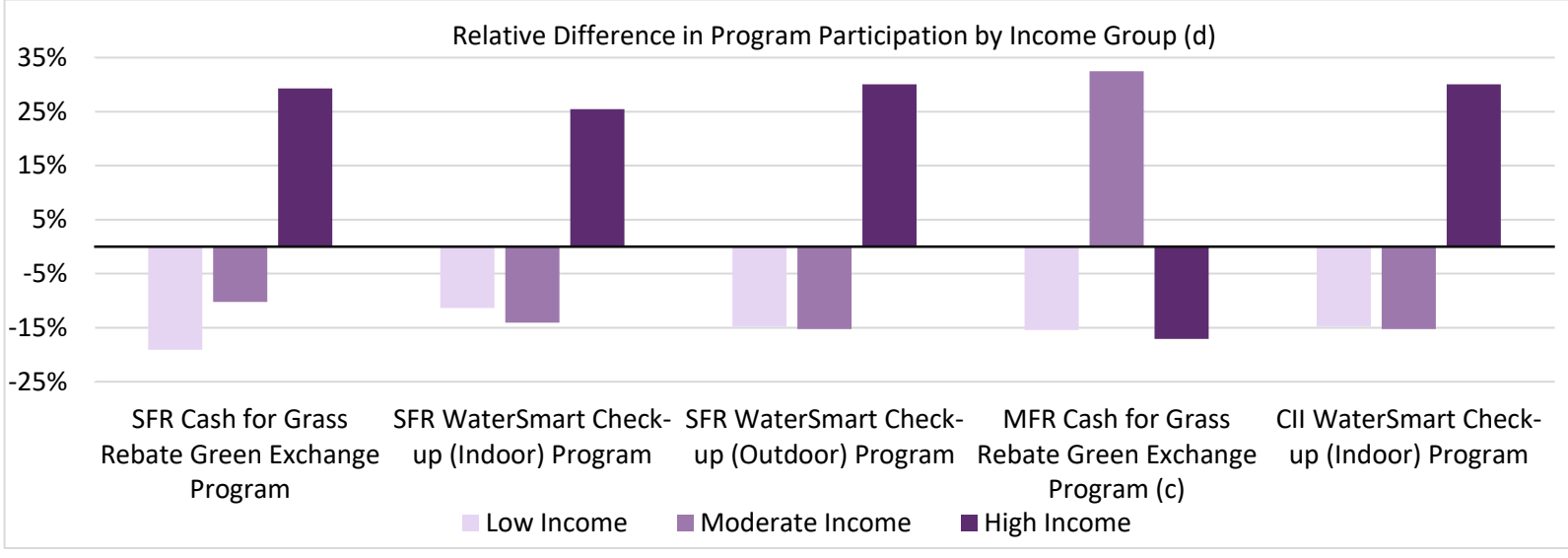


Table 4-12 Residential Customer Program Participation by Median Household Income

City of Santa Rosa, Sonoma-Marin Saving Water Partnership



Abbreviations:

CII = commercial, industrial, institutional

HCD = United States Department of Housing and Community Development

Notes:

(a) Household income is based on the estimated 2023 median household income by Census Block Group, per Census (2023). Income level groupings are based on California Department of Housing and Community Development (HCD) income levels for Sonoma County for a 2-person household in 2023 (HCD, 2025). The average persons per household is 2.4 for Sonoma County, based on Census data.

(b) Residential customers include both single-family and multi-family customers. Participants included in this analysis are limited to those who participated between 2020 and 2024 and for which location data are available.

(c) While both CII and MFR customers are targeted by this program, only MFR customers were considered in this analysis.

(d) Relative difference is calculated as the percentage of program participation by income group minus the overall percentage of residential customers by income group within the service area.

References:

1. Census, 2023. 2019-2023 American Community Survey 5-year estimates. TIGER/Line Shapefiles by Block Group, United States Census Bureau, downloaded on 28 May 2025. https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html
2. HCD, 2023. Memorandum: 2023 State Income Limits, California Department of Housing and Community Development, dated 6 June 2023.

Table 4-13 Residential Customer Program Participation by Percentage of Renters
City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Percentage of Renters (a)		Percentage of Residential Customers in Santa Rosa (b)	Percentage of Participating Residential Customers, 2020-2024 (b)				
			SFR Cash for Grass Rebate Green Exchange Program	SFR WaterSmart Check-up (Indoor) Program	SFR WaterSmart Check-up (Outdoor) Program	MFR Cash for Grass Rebate Green Exchange Program (c)	MFR WaterSmart Check-up (Outdoor) Program (c)
Low Rentership	≤25%	36%	50%	47%	50%	30%	26%
Low to Moderate Rentership	25.1%-50%	34%	32%	32%	32%	50%	19%
Moderate to High Rentership	50.1%-75%	24%	15%	17%	15%	14%	42%
High Rentership	>75%	6.0%	3%	4%	3%	6%	13%

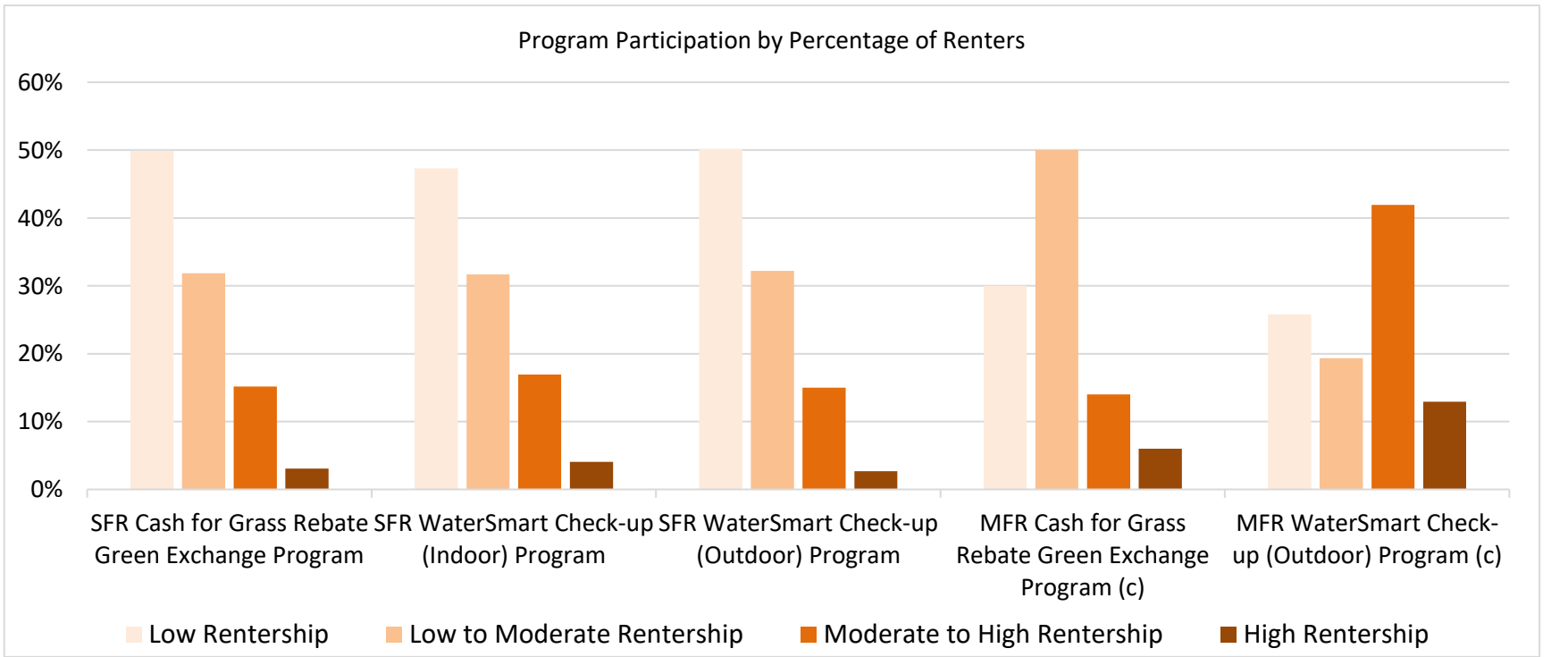
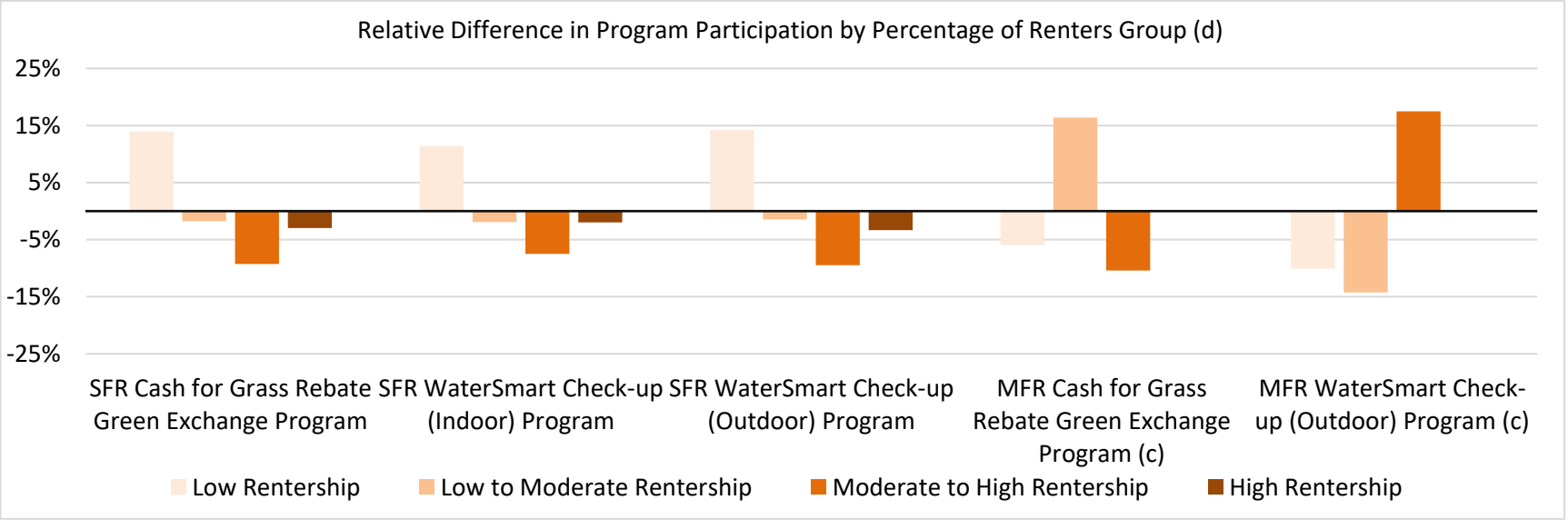


Table 4-13 Residential Customer Program Participation by Percentage of Renters

City of Santa Rosa, Sonoma-Marin Saving Water Partnership



Abbreviations:

CII = commercial, industrial, and institutional

MFR = multi-family residential

SFR = single family residential

Notes:

(a) Percent rentership reflects the proportion of population within a given Census Block Group that lives in renter-occupied homes. Low rentership indicates an area consists predominantly of owner-occupied homes; high rentership indicates an area consists predominantly of renter-occupied homes. Rentership is based on estimated percentage of rentership by Census Block Group, per (Census, 2023).

(b) Residential customers include both single-family and multi-family customers. Participants included in this analysis are limited to those who participated between 2020 and 2024 and for which location data are available.

(c) While both CII and MFR customers are targeted by this program, only MFR customers were considered in this analysis.

(d) Relative difference is calculated as the percentage of program participation by percent of renters group minus the overall percentage of residential customers by percent of renters group within the service area.

References:

1. Census, 2023. 2019-2023 American Community Survey 5-year estimates. TIGER/Line Shapefiles by Block Group, https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html. United States Census Bureau, downloaded on 28 May 2025.

Table 4-14 Residential Customer Program Participation by Median Household Age
City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Median Household Age (a)	Percentage of Residential Customers in Santa Rosa (b)	Percentage of Participating Residential Customers, 2020-2024 (b)				
		SFR Cash for Grass Rebate Green Exchange Program	SFR WaterSmart Check-up (Indoor) Program	SFR WaterSmart Check-up (Outdoor) Program	MFR Cash for Grass Rebate Green Exchange Program (c)	MFR WaterSmart Check-up (Outdoor) Program (c)
<35 Years	20%	9%	10%	10%	10%	16%
35-45 Years	40%	33%	32%	25%	14%	35%
45-55 Years	23%	31%	30%	31%	8%	19%
>55 Years	17%	27%	28%	34%	68%	29%

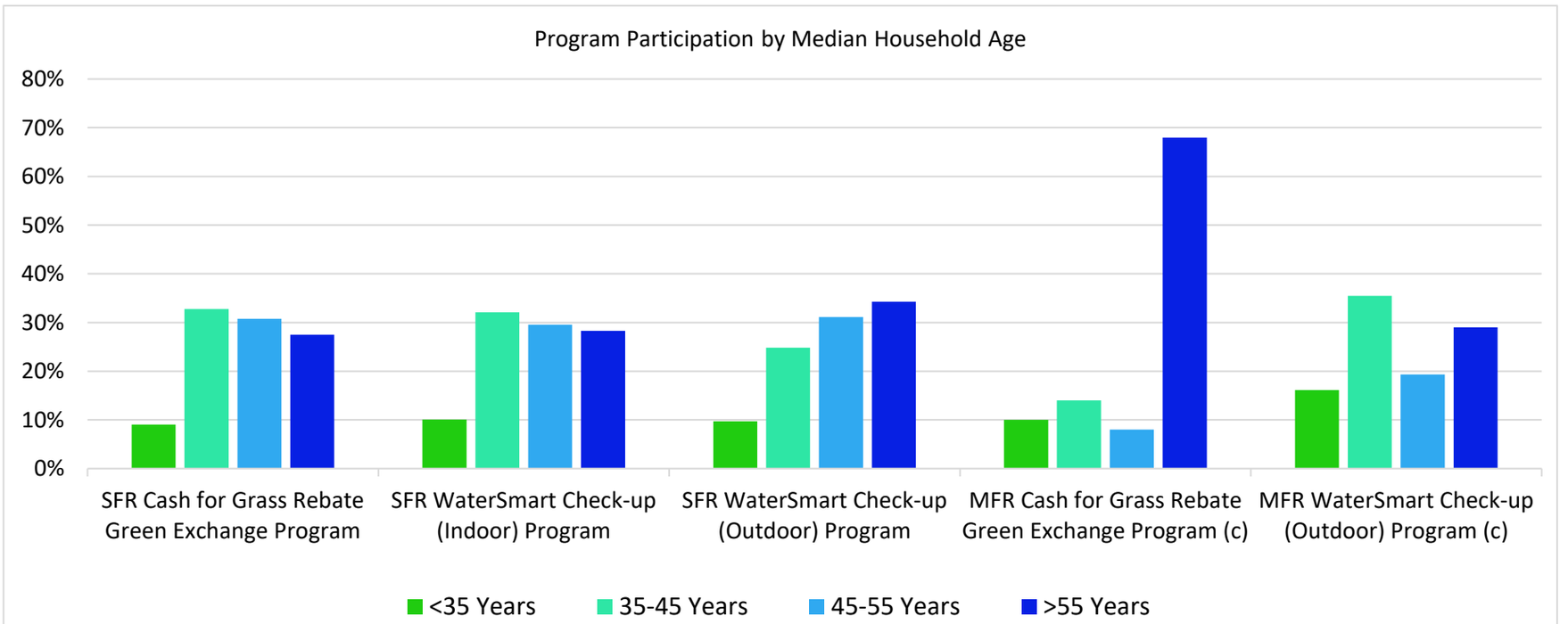
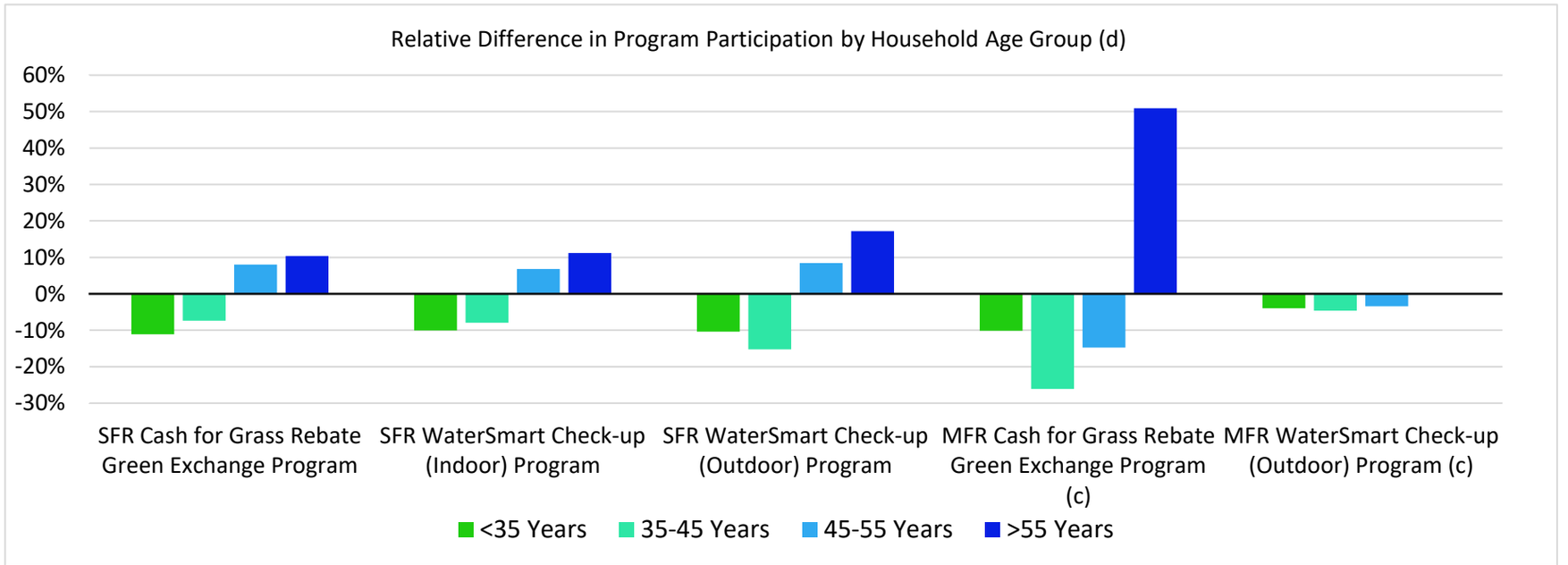


Table 4-14 Residential Customer Program Participation by Median Household Age
City of Santa Rosa, Sonoma-Marin Saving Water Partnership



Abbreviations:

CII = commercial, industrial, and institutional
MFR = multi-family residential
SFR = single family residential

Notes:

(a) Median household age is based on the estimated median age of household members by Census Block Group, per (Census, 2023).
(b) Residential customers include both single-family and multi-family customers. Participants included in this analysis are limited to those who participated between 2020 and 2024 and for which location data are available.
(c) While both CII and MFR customers are targeted by this program, only MFR customers were considered in this analysis.
(d) Relative difference is calculated as the percentage of program participation by household age group minus the overall percentage of residential customers by household age group within the service area.

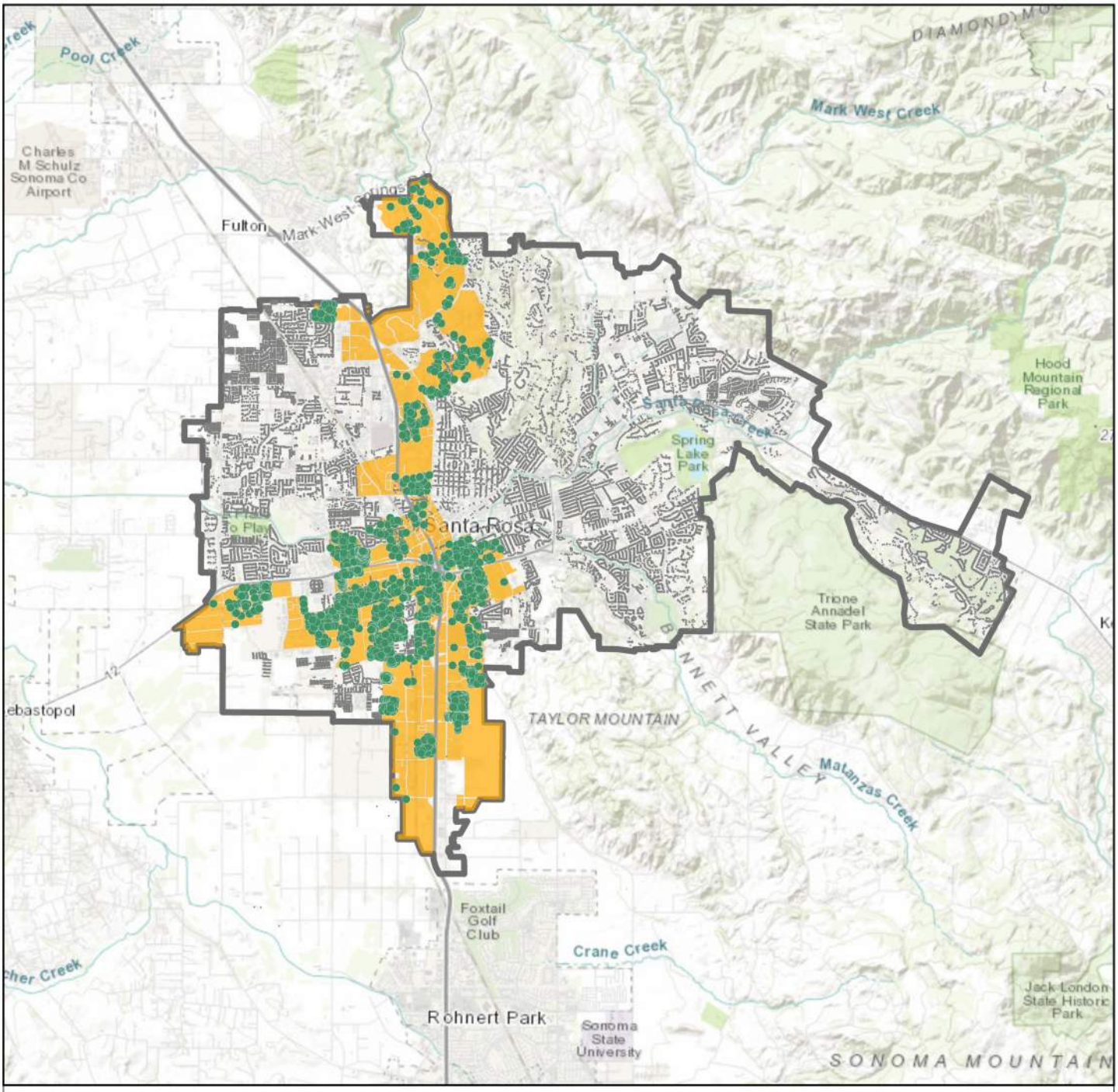
References:

1. Census, 2023. 2019-2023 American Community Survey 5-year estimates. TIGER/Line Shapefiles by Block Group, https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html, United States Census Bureau, downloaded on 28 May 2025.
on 28 May 2025.

4.7 Summary

Sections 4.3 through 4.6 above identify opportunities for the City to increase customer participation in each of the six programs through targeted outreach to certain customer classes. The results of these analyses can be combined to identify specific customers by overlaying these results spatially. For example, one may identify SFR customers to target with the Cash for Grass Rebate Green Exchange and WaterSmart Check-up Programs by overlaying customers in areas: (1) outside of the high participation areas identified on **Figure 4-3** through **Figure 4-5**, i.e., in the northern and southern portions of the City, (2) within the low income areas identified on **Figure** 4-10, and (3) in areas of with between 50-75% rentership as shown on **Figure 4-11**, and (4) in areas with younger household age groups as shown on **Figure 4-12**. By overlaying these key metrics, **Figure 4-13** shows SFR customers identified for potential targeting with Cash for Grass Rebate Green Exchange Program or WaterSmart Check-up outreach materials.

With the MFR sector, customers to potentially target with the Cash for Grass Rebate Green Exchange Program are (1) in portions of the service area other than the northwest, which is largely saturated, as shown on **Figure 4-6**, (2) residing in pre-1994 buildings, (3) within the high or low income areas, (4) in areas with between 50-75% rentership, and (5) in areas with younger household age groups.



Legend

- Service Area Boundary
- Target Area
- All SFR Customers
- SFR Customers to Potentially Target with Outreach (3,611 Customers)

Abbreviations

SFR = single family residential

Notes

1. All locations are approximate.
2. SFR customers to potentially target with outreach for SFR programs are identified as those (1) outside areas of high participation, (2) within low income household areas, and (3) within areas of 50–75% rentership.

Sources

1. Water use efficiency program data provided by the City of Santa Rosa in May 2025.
2. Basemap provided by ESRI.

DRAFT

N

0 2 4

(Scale in Miles)

Potential Customers to Target for SFR Programs

Sonoma Marin Saving Water Partnership
October 2025
C40180.00
Figure 4-13

eki environment & water

Path: X:\C40180\Map_00\2025\10\ReportFigures.aprx

5 WATER DEMAND PROJECTIONS

The purpose of this section is to document the basis, methodology, and resulting projected demands for the City through 2050. As described in more detail below, the future water demands for the City were estimated by:

1) Applying an estimated growth rate to accounts within each water use sector based on projected population and employment growth rates,
2) Evaluating and selecting water demand factors for each water use sector based on review of recent average per account water use representing three scenarios,
3) Estimating future passive savings using the Alliance for Water Efficiency (AWE) Water Conservation Tracking Tool (AWE model), and
4) Calculating estimated future water demand that incorporates the anticipated account growth, water demand factors, and estimated future passive water savings.

This methodology is consistent with CWC § 10631(d)(4)(A), which requires that "Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area." The assumptions used as the basis for demand projections were developed in close coordination with the City and reflect a land-use based approach consistent with the City's community planning.

5.1 Basis for Account Growth Projections

Baseline water demand is estimated by multiplying the number of accounts by the sector-specific demand factors, before applying other adjustment factors. In order to estimate how accounts will grow within the City, recent historical account growth within the City was considered, as well as projected future growth in population and employment. As described below, it was assumed that depending on the customer sector, the number of accounts will grow at the same rate as the projected population or employment growth.

Table 5-1 identifies the growth projection assumptions applied to each potable water use sector per the City's direction and identifies the average annual growth rate in accounts observed within the City from 2010-2024 to provide context for the growth assumptions. Growth for the residential sectors is based on the City's General Plan 2023-2031 Housing Element population projections, which are higher than the historical growth observed in the SFR sector from 2015-2024, but lower in the multifamily sector for that same historical time period. Similarly, the projected growth for the CII sectors (commercial, industrial, and institutional/governmental) and "other" sector is based on the City's General Plan 2023-2031 Housing Element employment projections. Irrigation account growth is based on assumptions relative to SFR, MFR and CII account growth (Santa Rosa, 2025a). There are currently no plans for expansion of the recycled water system, and thus no account growth is assumed (Santa Rosa, 2025a).

Table 5-2 presents the City's historical population from the California Department of Finance estimates published in 2025 and population and employment growth projections for the City based on the City's General Plan 2023-2031 Housing Element (PlaceWorks, 2023), which are based on ABAG 2018 (ABAG, 2018). The planning horizon for the 2025 UWMP is 2050; however,

the General Plan 2023-2031 Housing Element projections extend only through 2040. For purposes of demand projections, it was assumed that the projected growth rates from 2035 through 2040 extend through 2050.

Table 5-1 Historical and Projected Account Growth Rate by Customer Sector

Water Use Sector	Basis for Account Growth	Average Annual Growth (a)	
		Historical (2015-2024) (b)	Projected Growth Through 2050
Single Family (c)	General Plan Population (d)	0.49%	0.91%
Multifamily (c)	General Plan Population (d)	2.0%	1.8%
Commercial	General Plan Employment (d)	0.12%	0.24%
Institutional	General Plan Employment (d)	-0.55%	0.24%
Industrial	General Plan Employment (d)	-0.64%	0.24%
Irrigation	Relative to SFR, MFR, and CII Accounts	-0.39%	0.92%
Other (e)	General Plan Employment (d)	1.8%	0.24%
Recycled	No growth; (140 AFY)	-1.1%	-

Abbreviations:

AFY = acre-feet per year
CII = commercial, industrial, institutional
MFR = multifamily residential
SFR = single family residential
UWMP = Urban Water Management Plan
WSA = Water Supply Assessment

Notes:

(a) Growth is presented on an average annual basis over the indicated period. When applied to account growth, the specific growth rate between each 5-year period was applied.
(b) Historical annual growth percentage is based on the historical number of accounts.
(c) To reflect a higher proportion of multi-family development from historical patterns, 50% of new households to be built within the City is allocated to single family homes and the remainder 50% is allocated multi-family homes, which aligns with the City's 2050 General Plan WSA (Santa Rosa, 2020).
(d) General Plan 2023-2031 Housing Element (PlaceWorks, 2023).
(e) "Other" accounts include firelines, construction, and yard meters.

Table 5-2 Population and Employment Growth Projections
City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Category	Growth Projections											Total Growth Rate 2024-2050	Average Annual Growth Rate 2024-2050
	2020	2021	2022	2023	2024	2025	2030	2035	2040	2045	2050		
Population													
Historical Population Estimates (a)	178,059	177,623	175,007	175,013	174,890	--	--	--	--	--	--	--	--
General Plan Population Projections (b)	--	--	--	--	--	186,445	204,795	213,615	223,060	232,923	243,222	30%	1.22%
Single Family Population (c)	--	--	--	--	117,006	122,668	131,659	135,981	140,609	145,442	150,489	23%	0.91%
Multifamily Population (c)	--	--	--	--	57,884	63,777	73,136	77,634	82,451	87,481	92,733	45%	1.82%
Employment													
Historical Employment Estimates (d)	74,133	72,933	76,155	--	--	--	--	--	--	--	--	--	--
General Plan Employment Projections (b)	--	--	--	--	--	88,315	90,425	91,243	92,060	92,878	93,695	6%	0.24%

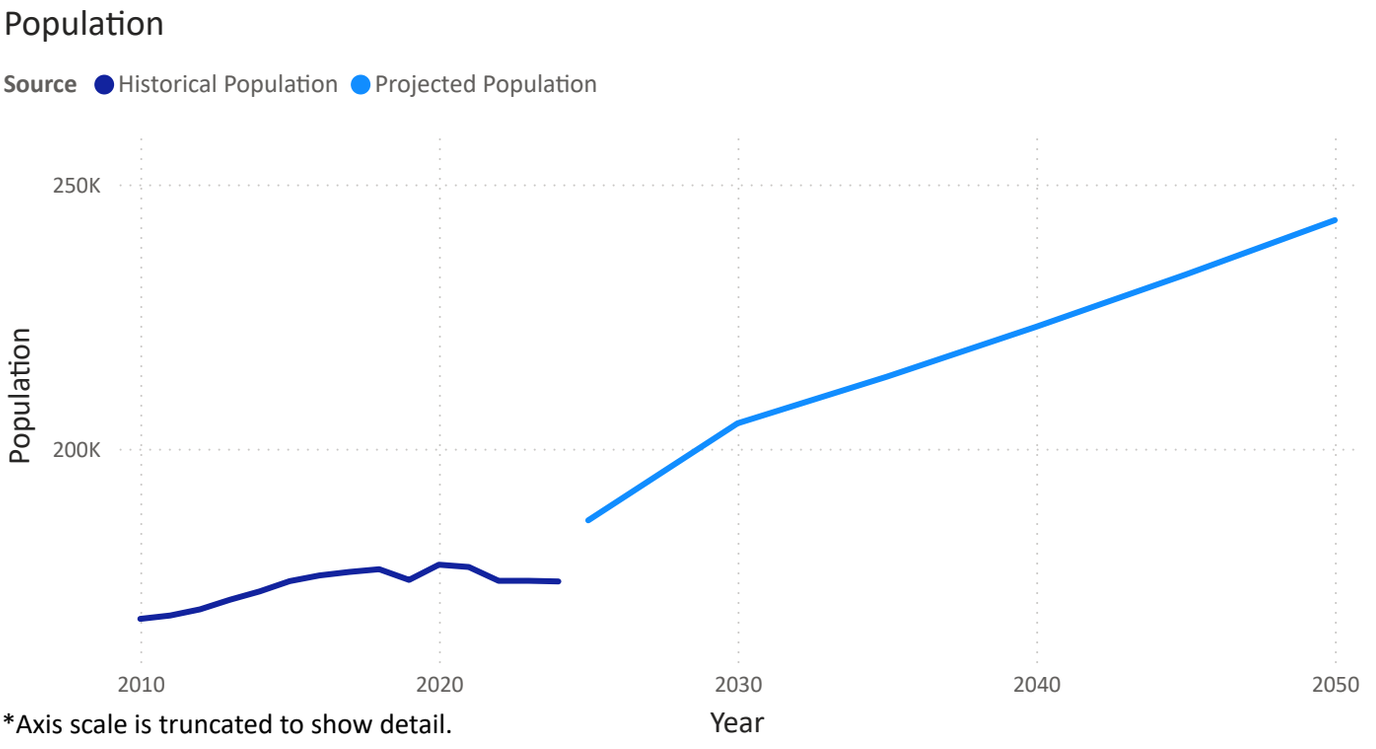
Abbreviations:

-- = not available
ABAG = Association of Bay Area Governments
DOF = California Department of Finance
WSA = Water Supply Assessment

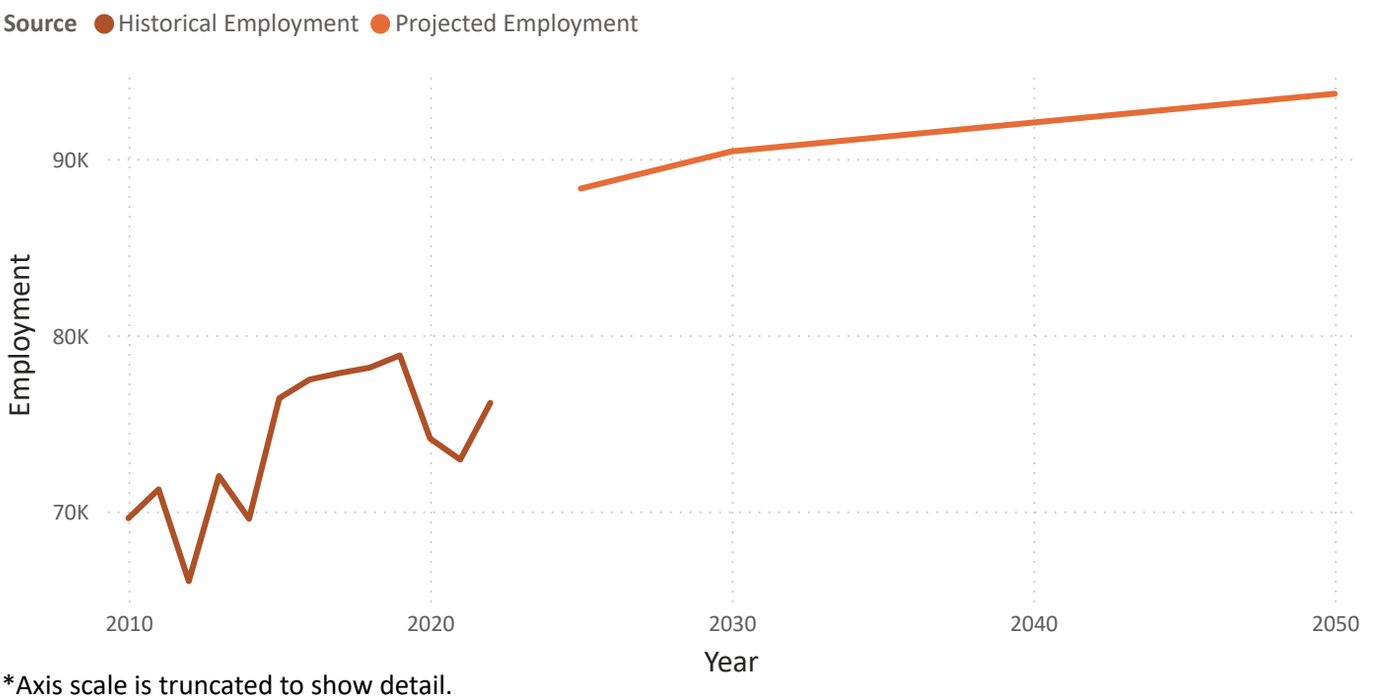
Notes:

(a) Historical population based on DOF estimates (DOF, 2024a).
(b) Population and employment projections per the City's General Plan 2023-2031 Housing Element (PlaceWorks, 2023), which are based on ABAG 2018 (ABAG, 2018). The City's General Plan 2023-2031 Housing Element includes projections through 2040. 2045 and 2050 population and employment projections are calculated based on 2035-2040 growth rates.
(c) Existing (2024) single family and multifamily population estimated per DOF household estimates (DOF, 2024b). Projected single family and multifamily population is estimated based on the assumption that 50% of new households to be built within the City will be single family homes and the remaining 50% will be multifamily homes to reflect a higher proportion of multifamily development from historical patterns, consistent with the City's 2050 General Plan WSA.
(d) Historical employment estimates per the U.S. Census Bureau (U.S. Census Bureau, 2025).

Figure 5-1 Population and Employment Projections
City of Santa Rosa, Sonoma-Marin Saving Water Partnership



*Axis scale is truncated to show detail.



*Axis scale is truncated to show detail.

5.2 Planned Development Within the Service Area

The City identified two planned development projects that are anticipated to come online during the planning horizon, and are in addition to the growth assumptions identified by City staff:

- Woodlands at Chanate: A 661 single family residential unit development on approximately 70 acres in the northeastern portion of the City. The total project demand is estimated to be 137 AFY with full buildout of the project anticipated to be completed by 2030 (Santa Rosa, 2025b).
- South Santa Rosa Area Specific Plan: The Specific Plan will guide the future development of a 1,900-acre area in the southern portion of the City, identifying land use and transportation improvements to serve people who live, work, and play in the area. No further details on the anticipated land uses and quantities are available at the time of this report.

Water demand associated with the Woodlands at Chanate development is shown in **Table 5-4**.

5.3 Water Demand Factors

Water use rates are influenced by a variety of factors, including weather, economic recession, and state and local regulations, among other drivers. Given this, selecting a "representative" baseline is important to developing the land-use based water demand factors to estimate baseline water use by existing customers, which can then be extrapolated and applied to future growth within the City. **Table 5-3** shows the water demand factors used to estimate baseline water demand.

5.3.1 Potable Water

Water demand factors based on historical use within the City were used as the basis of future demand projections for potable water accounts. As discussed in Section 3.2, the City's per-account water use declined significantly over the past 15 years due to improvements in water use efficiency and showed significant response to key events such as the 2014-2017 drought, the 2021-2023 drought, and the COVID-19 pandemic. Current (2024) water use is below historical levels. Potable water demand factors are developed based on the maximum per account annual water use by sector for 2017 through 2019, generally representing the lower levels of recent water use but considering some rebound to pre-2020 levels.

5.3.2 Recycled Water

Given that there are no plans currently to expand the recycled water system, no demand factors are developed for recycled water use.

5.3.3 Non-Revenue Water and Water Loss

Non-revenue water is water that has been produced but not billed and thus does not generate revenue for the supplier. To more fully capture total water use within the City, non-revenue water is estimated based on a sum of (1) unbilled authorized uses (such as water for fighting fires and flushing mains), (2) apparent water loss due to metering inaccuracies, and (3) real water loss due to distribution system leaks. Rates of non-revenue water in gpd per service connection are based on the City's Calendar Year 2023 water loss report.

Table 5-3 Selected Water Demand Factors

Water Use Sector Group	Water Demand Factor	Units	Basis for Demand Factor
Water Consumption			
Single Family	175	GPD/account	Maximum of 2017-2019
Multi-family	845	GPD/account	Maximum of 2017-2019
CII Total (a)	871	GPD/account	Maximum of 2017-2019
Irrigation	1,039	GPD/account	Maximum of 2017-2019
Other (b)	74	GPD/account	Maximum of 2017-2019
Non-Revenue Water			
Apparent Losses	3.1	GPD/connection	CY 2023 Water Loss Audit
Real Losses	15	GPD/connection	CY 2023 Water Loss Audit
Unbilled Authorized	0.37	GPD/connection	CY 2023 Water Loss Audit

Abbreviations:
CY = calendar year
GPD = gallons per day

Note:
(a) Represents the combined demands of all CII sectors with mixed-use meters. The CII sectors are evaluated as a single group as the same growth rate is applied uniformly across all CII sectors; therefore, it is mathematically equivalent to projecting each sector individually and summing the results. Final projected demands are then allocated back to each CII sector based on their relative proportions within the CII Total group.
(b) "Other" accounts include firelines, construction, and yard meters.

5.4 Passive Water Savings Estimate

Passive water savings are the water savings associated with the natural replacement of older toilets, showerheads, clothes washers, and other water using appliances with newer high efficiency devices that are available due to both market shifts and increasing efficiency mandated by the building code and other regulatory requirements. The AWE model was used to estimate future passive savings within the City (AWE, 2021). These future water savings are a result of (1) plumbing/energy codes interacting with the natural replacement of toilets, showerheads, and other water using appliances whose current or future efficiency is dictated by national, state, or local code requirements, and (2) water savings from water conservation program freeriders. The AWE model calculates efficient plumbing fixture saturation rates and takes into account historical and projected replacement of plumbing fixtures by utility programs as well as natural replacement. The AWE model also considers estimates of historical population, residential building stock, number of accounts, and projected population and account growth to estimate future passive savings.

An adjustment factor of 76% is applied to the AWE model estimates to conservatively cap passive savings at the levels estimated in the 2020 Water Demand and Conservation Measure Report (EKI, 2020). The estimated passive savings are presented in **Table 5-4** and are subtracted from the water demand projected based on the water demand factors described in Section 5.3 above. Passive savings are only applied to potable water use.

Table 5-4 Projected Demand and Passive Conservation

Water Use Sector	Projected Demand (AFY) (a)					
	2025	2030	2035	2040	2045	2050
Potable Water						
Baseline Potable Water Demand	19,192	20,678	21,426	22,218	23,041	23,896
Estimate of Known Planned Developments						
Woodlands at Chanate (b)	0	137	137	137	137	137
Passive Water Conservation (c)	(396)	(1,201)	(1,642)	(2,042)	(2,413)	(2,770)
Total Potable Water Demand	**18,796**	**19,614**	**19,921**	**20,313**	**20,765**	**21,263**
Recycled Water						
Recycled Water	140	140	140	140	140	140
Total Recycled Water Demand	**140**	**140**	**140**	**140**	**140**	**140**
Total Water Demand	**18,936**	**19,754**	**20,061**	**20,453**	**20,905**	**21,403**

Abbreviations:
AFY = acre-feet per year
AWE = Alliance for Water Efficiency

Notes:
(a) Water demand projections are estimated based on growth in accounts shown in **Table** 5-1 and the water demand factors identified in **Table 5-3**. Non-revenue water projections are estimated by water loss factors shown in **Table 5-3** and the total growth in number of services from all sectors.
(b) Water demand and buildout schedule for the Woodlands at Chanate are based on the project's Water Supply Assessment (Santa Rosa, 2025b).
(c) Passive water savings are based on the AWE Conservation Tracking Tool; however, the savings were conservatively capped at the 2020 Water Demand and Conservation Measure Report estimates.

5.5 Projected Water Demand Through 2050

Future potable water demand was projected for each sector based on their respective demand factors, non-revenue water estimated as a proportion of total potable water production, and estimated passive savings, and is shown in **Table 5-4**. Given that there are no plans to expand the

recycled water system, recycled water use projections are limited to its current capacity of 140 AFY. Potable water demand is projected to increase to 21,263 AFY in 2050, which is an 30% increase over 2024 water demand.

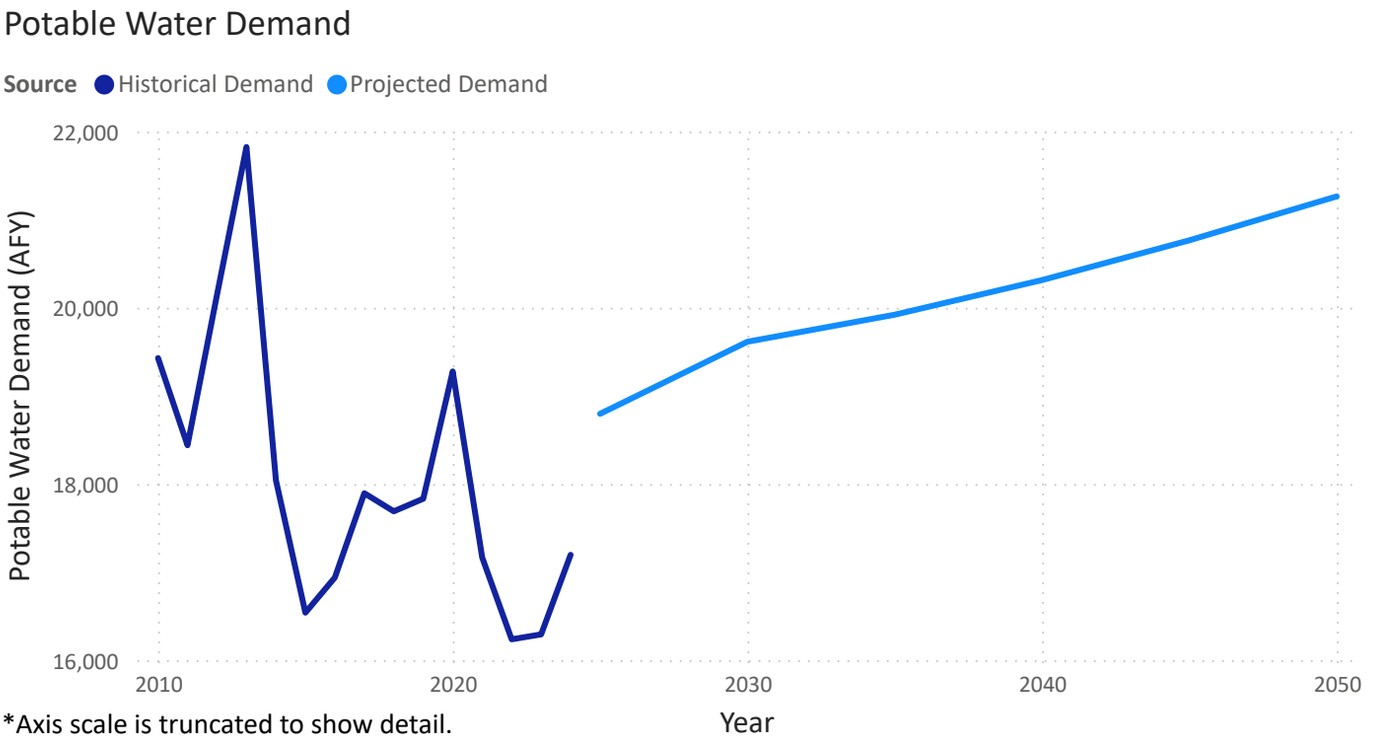
Table 5-5 Projected Water Demand by Sector

Water Use Sector	Projected Demand (AFY) (a)					
	2025	2030	2035	2040	2045	2050
Potable Water						
Single Family Residential	9,302	9,722	9,832	9,994	10,192	10,417
Multifamily Residential	3,509	3,763	3,872	4,006	4,158	4,323
Commercial	2,186	2,163	2,133	2,106	2,084	2,063
Industrial	347	343	338	334	330	327
Institutional	333	329	325	321	317	314
Irrigation	1,823	1,907	1,991	2,075	2,159	2,243
Other	109	112	113	114	115	116
Non-Revenue Water	1,187	1,274	1,317	1,363	1,410	1,460
Total Potable Demand (b)(c)	**18,796**	**19,614**	**19,921**	**20,313**	**20,765**	**21,263**
Recycled Water						
Recycled Water	140	140	140	140	140	140
Total Recycled Water Demand	**140**	**140**	**140**	**140**	**140**	**140**

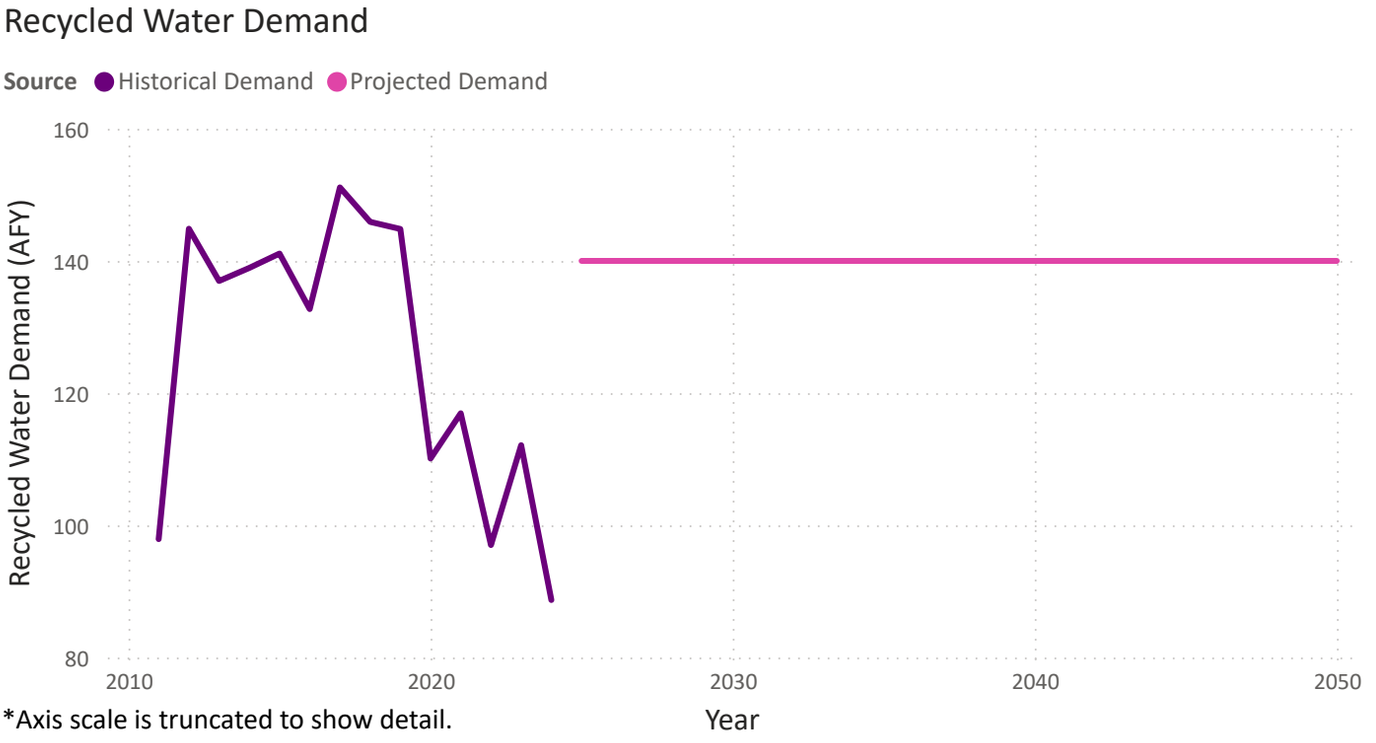
Abbreviation:
AFY = acre-feet per year

Notes:
(a) Water demand projections are estimated based on growth in accounts shown in **Table** 5-1 and the water demand factors identified in **Table 5-3**. Non-revenue water projections are estimated by water loss factors shown in **Table 5-3** and the total growth in number of services from all sectors.
(b) Passive savings for each sector calculated from the AWE Conservation Tracking Tool and adjusted to cap savings conservatively at levels estimated in the 2020 Water Demand and Conservation Measure Report.
(c) Totals may not sum due to rounding.

Figure 5-2 Water Demand Projections
City of Santa Rosa, Sonoma-Marin Saving Water Partnership



*Axis scale is truncated to show detail.



*Axis scale is truncated to show detail.

Abbreviations:
AFY = acre-feet per year

5.6 Projected Compliance with UWUOs

To forecast the City's Objective compliance, a analysis was conducted comparing the City's projected water use to its Objectives for 2025, 2030, 2035, and 2040. The projected water demands subjective to the Objectives and the corresponding Objectives are calculated using the following data sources and assumptions:

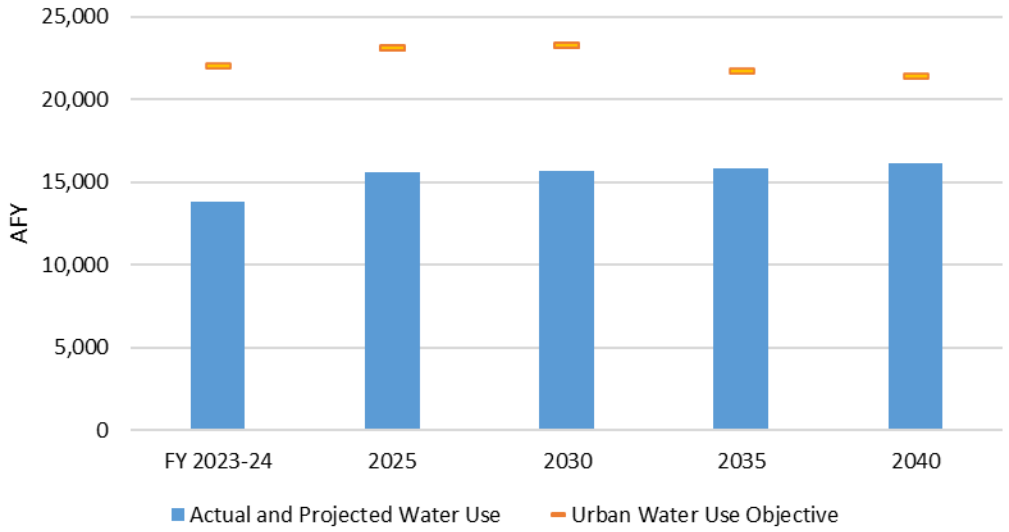
- Projected population, water use components subjective to the objectives (e.g., residential water use and dedicated irrigation water use), and real water loss described in Sections 5.1 and 5.5;
- Decreasing Objective water use standards through 2040 as described in Section 2.2.1;
- Residential landscape area based on values reported in the City's Fiscal Year (FY) 2023-24 UWUO Annual Report and increasing proportional to population projections;
- Existing (2024) CII landscape area on DIMs irrigated with potable water estimated from FY 2023-24 water use assuming a LEF of 0.80;
- Future CII landscape area on DIMs irrigated with potable water increasing proportionally with City's irrigation accounts; and
- CII landscape area on DIMs irrigated with recycled water (i.e., Special Landscape Area) estimated from a water use of 140 AFY assuming a LEF of 1.0.

The results of this analysis show that the City is anticipated to comply with its Objectives through 2040, as shown below in **Table 5-6** and **Figure 5-3. Figure 5-4** compares projected values of each Objective component from 2025 through 2040 to examine relative contributions to Objectives compliance. However, agencies are only assessed against the overall Objective (i.e., they are not required to comply with the individual water use standards as long as they meet the overall Objective.

Table 5-6 Actual and Projected Water Use vs. Urban Water Use Objectives

Year (a)	Actual and Projected Water Use Subject to the Objectives (b) (AFY)	UWUO (AFY)
FY 2023-24	13,804	22,029
2025	15,577	23,076
2030	15,707	23,259
2035	15,830	21,753
2040	16,156	21,398

Figure 5-3 Actual and Projected Water Use vs. Urban Water Use Objectives



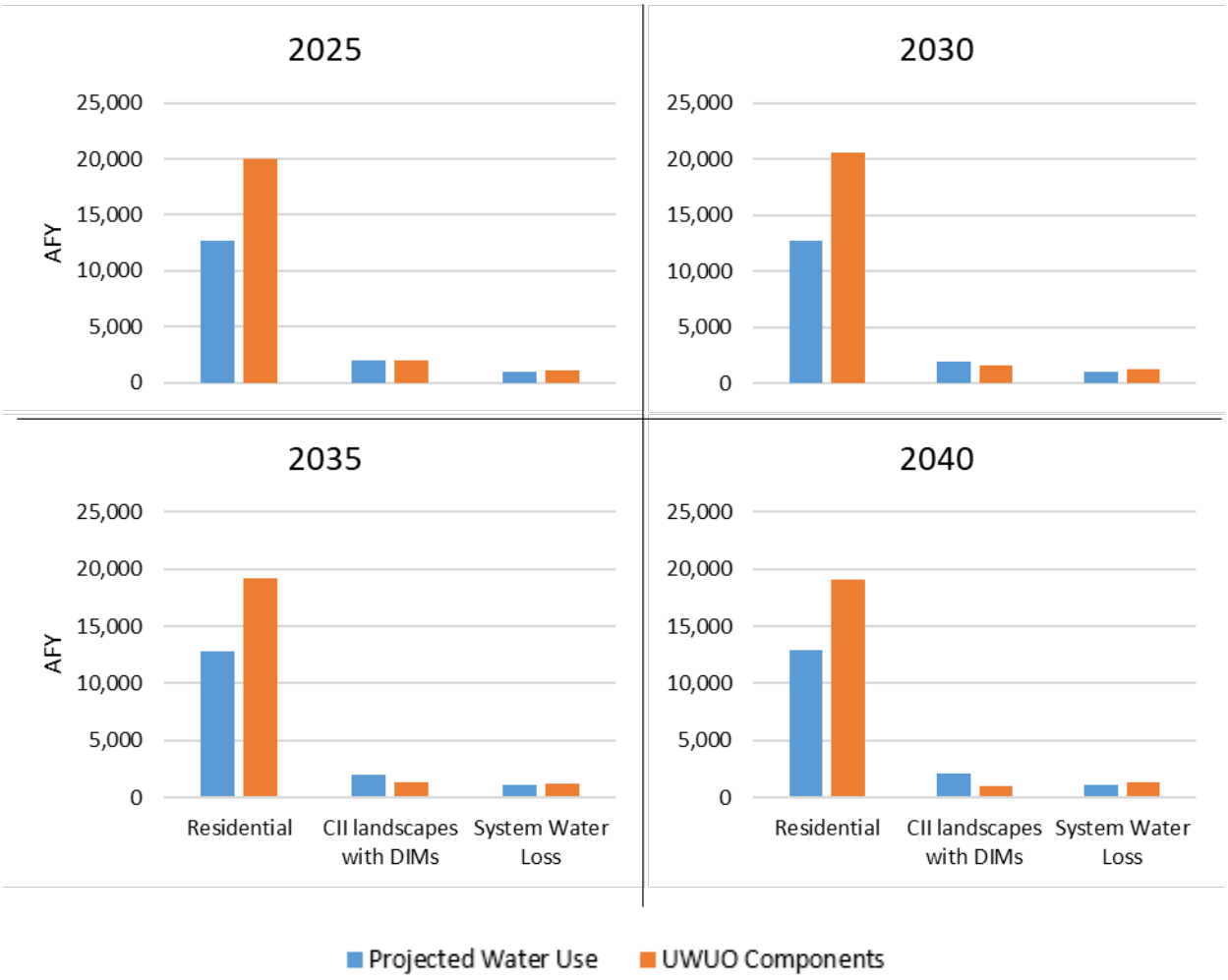
Abbreviations:

AFY = acre-feet per year
CY = calendar year
FY = fiscal year
UWUO = Urban Water Use Objective

Notes:

(a) Calendar years unless otherwise noted.
(b) Only includes the water use components that are subject to the Objective.

Figure 5-4 Projected Water Use vs. Urban Water Use Objectives by Component



Abbreviations:

AFY = acre-feet per year
CII = commercial, industrial, and institutional
DIM = dedicated irrigation meter

Notes:

This figure provides a comparison for each component to examine their relative contributions to Objectives compliance. However, agencies are only assessed against the overall Objective (i.e., they are not required to comply with the individual water use standards as long as they meet the overall Objective

6 CONSERVATION MEASURES UPDATE

The following section evaluates current and potential conservation programs and measures for both the City and the SMSWP. The purpose of this section is to compile programs and measures that are prioritized by both the City and by all Water Contractors in the SMSWP collectively and calculate the potential water savings and economic feasibility of the programs. Section 6.1 discusses the methodology used to prioritize conservation programs and measures. Section 6.2 describes the programs and measures given high priority for regional implementation by the nine Water Contractors collectively, and Section 6.3 describes programs and measures given high priority by the City. Next steps will include analyzing the potential water savings and cost-benefit for those programs selected by the City as both individual programs and in select program portfolios. By assessing the feasibility of these programs, the City can make more informed decisions regarding program selection and implementation.

6.1 Methodology for Screening of Potential Water Conservation Measures

A comprehensive ranking list of over 100 conservation programs and measures was developed (Appendix D) to help agencies prioritize future conservation efforts and update the suite of common measures for modeling and future implementation, as required for the 2025 UWMPs. The Water Contractors ranked their priority projects and measures, which will contribute to the broader goals of forecasting demand through 2050, evaluating demand management strategies, and meeting regulatory goals.

The list includes the measures from the prior (2015 and 2020) screenings, minus those that are now obsolete, and new measures and technologies. New measures came from the library of the AWE Conservation Tracking Tool, version 4.0, and other identified measures per literature or implemented by other suppliers, including those that are available to the industry since 2020. The list also included measures currently implemented by the Water Contractors and the priority rankings selected in 2020.

Each of the nine Water Contractors was first asked to review and identify any additional programs to add to the ranking list. Following receipt of feedback from the Water Contractors, each Water Contractor was asked to rank the list and identify:

- Priority (on a scale of one to five, with five being the highest priority) as a program to be implemented regionally through the SMSWP;
- Priority (on a scale of one to five, with five being the highest priority) as a program to be implemented locally through their agency;
- The current implementation status of each program with options of (1) currently administered by their agency, (2) previously administered by their agency, or (3) current regional program through SMSWP.

The list of water conservation measures is organized into four categories, specifically: (1) agency actions and water rates, (2) public outreach and education, (3) device-based and financial incentive programs, and (4) policies and regulations.

6.2 Screening of Conservation Measures for Regional Implementation

The regional results of the water conservation measures prioritization screening are summarized for all Water Contractors combined, representing overall regional priorities and preferences (**Table 6-1**), which shows (1) the average prioritization ranking for all Water Contractors for each program for regional implementation, (2) the percentage of Water Contractors that prefer each program to be implemented at the regional level, and (3) an indication of each measure as a current SMSWP program or not.

Of the 116 measures and programs ranked, the Water Contractors screened these down to 11 high-priority measures that received an average score of three or higher, including two of the four categories: Public Outreach and Education-Based Conservation Programs, and Device-Based and Financial Incentive Programs.

6.2.1 Public Outreach and Education-Based Conservation Programs

Of the 14 public outreach and education-based water conservation programs included in the screening, the Water Contractors identified the following eight programs as high priority (average score of three or higher), with a preference for regional implementation through SMSWP:

1) Public Outreach through Print & Electronic Media - Focused on Outdoor Irrigation
2) School Education Programs
3) Promote QWEL Training (Qualified Water Efficient Landscaper)
4) Public Outreach through Print & Electronic Media - Focused on Indoor Conservation
5) Educational Workshops
6) Garden Tour
7) Do-It-Yourself Home Energy and Water Savings Toolkit
8) Garden Sense Consultation

These eight programs are already being implemented by SMWSP.

6.2.2 Device and Financial Incentive-Based Conservation Programs

Of the 60 device- and financial incentive-based water conservation programs included in the screening list, the Water Contractors identified the following three programs as high priority (average score of three or higher), with a preference for regional implementation through SMSWP:

1) Pass-through grant funding for Landscape Conversion or Turf Removal – SFR
2) Pass through grant funding for Landscape Conversion or Turf Removal – MFR and CII
3) High Efficiency Clothes Washer Rebate – Residential

Table 6-1 Regional Prioritization of Conservation Measures and Programs

Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Preference (b)	Sector	Indoor	Outdoor	Primary End Use	Current SMSWP Program
PUBLIC OUTREACH AND EDUCATION							
Public Outreach through Print & Electronic Media - Focused on Outdoor Irrigation	4.4	100%	All		X	Irrigation	✓
School Education Programs	4.0	100%	SFR, MFR	X	X	All	✓
Promote QWEL Training (Qualified Water efficient Landscaper)	3.9	89%	All		X	All Outdoor	✓
Public Outreach through Print & Electronic Media - Focused on Indoor Conservation	3.7	89%	All	X		All Indoor	✓
Educational Workshops	3.3	78%	All		X	All Outdoor	✓
Garden Tour	3.2	78%	SFR		X	All Outdoor	✓
Garden Sense Consultation	3.1	78%	SFR		X	All Outdoor	✓
Do-It-Yourself Home Energy and Water Savings Toolkit	3.2	78%	SFR	X	X	All	✓
DEVICE-BASED AND FINANCIAL INCENTIVE PROGRAMS							
Landscape Conversion or Turf Removal - SFR	3.3	67%	SFR		X	Irrigation	✗
Landscape Conversion or Turf Removal - MFR and CII	3.2	67%	MFR, CII		X	Irrigation	✗
High Efficiency Clothes Washer Rebate - Residential	3.1	67%	SFR, MFR	X		Clothes Washer	✗

Abbreviations:

AMI = advanced metering infrastructure
CalWEP = California Water Efficiency Partnership
CII = commercial, industrial, institutional
COM = commercial
HEU = High-Efficiency Urinals
IRR = irrigation
MFR = multi-family residential
MWELO = Model Water Efficient Landscape Ordinance
PRV = pressure reducing valve
SFR = single-family residential
SMSWP = Sonoma-Marin Saving Water Partnership
UHET = ultra high efficiency toilet

Notes:

(a) Each Water Contractor was asked to rank each conservation program or measure in terms of priority as a regionally-administered program, where 5 indicated highest priority and 1 indicated the lowest priority. Results are presented as an average of the responses of all nine Water Contractors.

(b) Presents the percentage of Water Contractors who indicated a priority of greater or equal to 3 for regional implementation.

6.2.3 Regional Program Screening Findings

During the May 2025 project workshop, the Water Contractors indicated that the three device- and financial incentive-based programs identified under Section 6.2.2 are already being implemented at the local level and expressed a preference for them to continue being implemented at a local level. The takeaway from this exercise is that the existing SMWSP public and education-based programs should remain regional programs and that there is currently no preference for new regional programs.

6.3 Screening of Conservation Measures for Local Implementation

The local results of water conservation program prioritization screening were summarized for all Water Contractors individually, representing their local priorities and preferences. Appendix D presents the results for the City and shows (1) the average prioritization ranking for each program for local implementation, (2) the targeted sector, (3) whether the program targets indoor or outdoor savings, (3) the primary end use, and (4) the implementation status as a local program.

6.3.1 Agency Actions and Water Rate Conservation Programs

Ten (10) agency action and water rate-based conservation programs were identified for the City as high priority (score of three or higher) for potential future implementation. The programs currently implemented by the City primarily target water loss and irrigation across all customer sectors, or indoor appliance water waste across all customer sectors. All of these programs or actions are currently implemented at the local level.

6.3.2 Public Outreach and Education-Based Conservation Programs

Nine public outreach and education-based programs were identified as high priority (average score of three or higher) for potential future implementation. Of these programs, three would target outdoor water use and four would target indoor and outdoor water use. All of these programs are currently implemented at the local level except one:

1) Provide Support with Smart Irrigation Controller Setup.

6.3.3 Device and Financial Incentive-Based Conservation Programs

Thirty-nine (39) device- and financial incentive-based water conservation programs were identified as high priority (average score of three or higher) for potential future implementation, including 27 that would target indoor water use, ten that would target outdoor water use, and two that would target both. The City currently implements all 39 of these programs, primarily targeting bathroom fixture replacements across all customer sectors, CII equipment upgrades for CII customers, and residential irrigation improvements.

6.3.4 Policy and Regulation-Based Conservation Programs

The City identified ten policy and regulation-based programs as high priority (average score of three or higher), including three that would target indoor water use, four that would target outdoor water use, and three that would target both. The City currently implements all ten of these programs.

6.4 Evaluation of Future Water Conservation Programs

Based on the conservation screening process described above, a suite of conservation programs to be considered for future implementation were evaluated. These programs were evaluated both individually and as components in four water conservation program scenarios, as shown in **Table 6-2**. The program scenarios each represent a potential approach or strategy for the City's future conservation programs, specifically:

- **Scenario A** represents the City's existing programs as a baseline,
- **Scenario B** represents programs ranked most highly for local implementation by the City of Santa Rosa,
- **Scenario C** focuses on programs that target outdoor water savings under Scenario B, and
- **Scenario D** focuses on programs that target water savings in CII customers under Scenario B.

Table 6-2 also identifies the customer sectors each program would target as well as whether the program focuses on indoor or outdoor water use, or both.

The benefits and costs associated with implementation of these programs were evaluated using the AWE model, using a series of assumptions documented in Appendix B. Key assumptions and considerations related to the methodology used by the AWE model and in this analysis are provided below:

- Water savings assumptions were based on a combination of (1) City-specific water savings estimates per Section 4.3.2, (2) information provided by City staff, (3) AWE model default assumptions, and (4) water savings factors developed based on other published literature sources.
- Costs to the utility were based on (1) rebate amounts of existing programs, (2) data used in the 2020 Report adjusted to 2025 dollars, or (3) AWE model default assumptions.
- Utility benefit (i.e., avoided cost of water) is assumed to be $ 1,289/AF, consistent with the FY 2024-2025 cost of purchasing wholesale water from Sonoma Water.
- Financial assumptions related to customer water rates were provided by the City.
- Financial assumptions related to energy costs to the customer were assumed based on typical PG&E rates (PG&E, 2024).
- Assumed rate of program implementation was based on historical participation levels by City customers in similar programs.
- For purposes of near-term conservation program analysis, it is assumed that all programs are active from 2026 through 2030; water savings beyond this period reflect cumulative savings achieved over time from implementation during this five-year period.
- Lost revenue due to reduced water sales is not included as a cost.
- Additional program-specific considerations are provided as notes in the attached tables.

Table 6-3 presents a combination of individual water conservation measures, and identifies the following information for each program:

- **Net present value of costs and benefits** – represents the present value over the 25-year period discounted to current 2025 dollars.
- **Benefit to cost ratio** – calculated as present value of costs divided by the present value of benefits.
- **Water utility costs** – costs that the City as a water utility will incur to operate the program including administrative costs.
- **Customer costs** – costs customers will incur to implement a program in the City's service area.
- **Utility benefits** – the avoided cost to the City to produce the volume of water saved.
- **Customer benefits** – the savings from reduced water/sewer utility bills and energy savings resulting from reduced use of hot water.
- **Total water utility costs** – includes costs to the City for program implementation from 2026-2030.
- **Water savings in 2030** – one-year estimate water savings in 2030.
- **Water utility cost of water saved for individual programs** – cost of water saved dividing by the lifetime water savings of that program.
- **Water utility cost of water saved for program scenarios** – weighted average of water utility cost of water saved for individual programs by the cumulative savings through 2050.

The analysis estimates active program savings based on the AWE model and does not include additional savings anticipated from passive savings (i.e., water savings associated with the natural replacement of less efficient water using fixtures and appliances due to both market shifts and increasing efficiency mandated by the building code and other regulatory requirements). Based on this analysis, and the assumptions presented in Appendix B, the benefit-cost ratios for the City range from 0.3 to 22.4. A benefit-cost ratio value greater than one indicates that the cost of implementing the program would be cheaper than purchasing supplies from Sonoma Water.

Table 6-4 presents the results of the analysis of the four conservation program scenarios identified in **Table 6-3**, and includes a summary of costs and benefits to the City and customers, estimated cumulative water savings through 2050 (based on assumed program implementation from 2026-2030), and the estimated cost of water saved to the City. Based on this, the City's preferred water conservation measures for local implementation (i.e., Scenario B) and its existing programs (i.e., Scenario A) have similar benefit-to-cost ratios at 1.6 as the programs selected under each of the two scenarios are highly similar. In comparison, the benefit to cost ratio of outdoor programs (i.e., Scenario C) is 1.3 and CII programs (i.e., Scenario D) is 1.9. The projected cumulative water savings associated with implementation of locally preferred measures (i.e., Scenario B) is 1,974 AF by 2030 and 2,785 by 2050, at a cost of approximately $929/AF. The figure

in **Table 6-4** shows active savings in 2030 associated with each scenario as well as anticipated passive savings.

Table 6-2 Conservation Program Scenarios

City of Santa Rosa, Sonoma-Marin Water Saving Partnership

Program	Sector	Indoor/ Outdoor	Program Scenario (a)			
			(A) Baseline	(B) Highly-Ranked Local Programs	(C) Highly-Ranked Outdoor Programs	(D) Highly-Ranked CII Programs
AMI Leaks Notification Program	All	Both	X	X		
HECW Rebate Program	MFR, CII	Indoor	X	X		X
HECW Rebate Program	SFR	Indoor	X	X		
WaterSmart Check-up (Indoor) Program	SFR	Indoor	X	X		
WaterSmart Check-up (Outdoor) Program	SFR	Outdoor	X	X	X	
WaterSmart Check-up (Indoor) Program	MFR	Indoor	X	X		
WaterSmart Check-up (Indoor) Program	CII	Indoor	X	X		X
WaterSmart Check-up (Outdoor) Program	MFR, CII	Outdoor	X	X	X	X
Irrigation Efficiency Rebate	SFR	Outdoor	X	X	X	
Irrigation Efficiency Rebate	MFR, CII	Outdoor	X	X	X	X
Pool Cover Rebate	SFR, MFR, CII	Outdoor	X	X	X	
Rain Water Harvesting Rebate	SFR, MFR, CII	Outdoor	X	X	X	
Recirculating Hot Water Pump Rebate	SFR, MFR, CII	Indoor	X			
High Efficiency Toilet Rebate	SFR, MFR, CII	Indoor	X	X		
Efficient Fixture Direct Install Program	SFR, MFR	Indoor	X	X		
Efficient Fixture Direct Install Program	CII	Indoor	X	X		X
Greywater Rebate	SFR, MFR, CII	Both	X	X		
Sustained Reduction (b)	CII, MFR, SFR	Both	X	X		X
High Efficiency Urinal Rebate	CII, MFR, SFR	Indoor	X	X		X
Cash for Grass Rebate Green Exchange Program	SFR	Outdoor	X	X	X	
Cash for Grass Rebate Green Exchange Program	MFR, CII	Outdoor	X	X	X	X

Abbreviations

CII = Commercial, Industrial, and Institutional
HECW = High-efficiency clothes washer
MFR = Multi-family residential
SFR = Single-family residential

Notes

(a) The program scenarios represent four potential approaches to program selection. Scenario 1 represents existing programs as a baseline, Scenario 2 represents programs prioritized for local implementation, Scenario 3 focuses on outdoor water savings, and Scenario 4 focuses on CII programs.

Table 6-3 Costs and Savings of Potential Conservation Programs
City of Santa Rosa, Sonoma-Marin Water Saving Partnership

Program (a)	Sector	Indoor/ Outdoor	Note	Net Present Value of Benefits		Net Present Value of Cost		Benefit to Cost Ratio		Water Utility Costs 2026-2030 (b)	Water Savings in 2030 (AFY)	Water Utility Cost of Water Saved ($/AF)
				Water Utility	Customers	Water Utility	Customers	Water Utility	Customers			
AMI Leaks Notification Program	All	Both		$350,894	$1,454,393	$271,929	$1,495,612	1.3	1.0	$297,138	61.3	$999
CII and MFR HECW Rebate Program	MFR, CII	Indoor		$16,422	$160,099	$5,973	$25,598	2.7	6.3	$7,000	1.9	$455
Residential HECW Rebate Program	SFR	Indoor	(c)	$33,588	$327,442	$8,211	$123,172	4.1	2.7	$10,200	2.4	$298
WaterSmart Check-up (Indoor) Program	SFR	Indoor	(c)	$31,759	$390,450	$72,700	$25,659	0.4	15.2	$81,940	5.6	$2,911
WaterSmart Check-up (Outdoor) Program	SFR	Outdoor	(c)	$71,866	$127,995	$94,872	$33,484	0.8	3.8	$106,930	12.7	$1,679
WaterSmart Check-up (Indoor) Program	MFR	Indoor		$981	$12,066	$3,167	$1,118	0.3	10.8	$3,570	0.2	$4,104
WaterSmart Check-up (Outdoor) Program	MFR, CII	Outdoor	(c)	$466,651	$831,114	$201,890	$327,388	2.3	2.5	$227,550	82.7	$550
WaterSmart Check-up (Indoor) Program	CII	Indoor	(c)	$136,604	$1,679,426	$188,759	$306,095	0.7	5.5	$212,750	24.2	$1,757
Irrigation Efficiency Rebate	SFR	Outdoor		$27,598	$49,153	$22,841	$13,704	1.2	3.6	$27,300	2.7	$1,026
Irrigation Efficiency Rebate	MFR, CII	Outdoor		$236,532	$1,283,869	$10,542	$14,056	22.4	91.3	$12,600	22.8	$55
Pool Cover Rebate	SFR, MFR, CII	Outdoor		$2,288	$4,074	$879	$3,517	2.6	1.2	$1,000	0.4	$487
Recirculating Hot Water Pump Rebate	SFR, MFR, CII	Indoor		$2,754	$69,981	$3,681	$25,769	0.7	2.7	$4,400	0.3	$1,657
High Efficiency Toilet Rebate	SFR, MFR, CII	Indoor		$4,249	$24,783	$555	$2,663	7.7	9.3	$2,375	0.2	$487
Efficient Fixture Direct Install Program	SFR, MFR	Indoor		$754,714	$5,475,092	$209,975	$0	3.6	-	$610,200	44.9	$725
Efficient Fixture Direct Install Program	CII	Indoor		$213,065	$1,242,829	$60,901	$0	3.5	-	$195,300	12.2	$816
Greywater Rebate	SFR, MFR, CII	Both		$1,129	$2,012	$753	$15,060	1.5	0.1	$900	0.1	$827

Table 6-3 Costs and Savings of Potential Conservation Programs
City of Santa Rosa, Sonoma-Marin Water Saving Partnership

Program (a)	Sector	Indoor/ Outdoor	Note	Net Present Value of Benefits		Net Present Value of Cost		Benefit to Cost Ratio		Water Utility Costs 2026-2030 (b)	Water Savings in 2030 (AFY)	Water Utility Cost of Water Saved ($/AF)
				Water Utility	Customers	Water Utility	Customers	Water Utility	Customers			
Sustained Reduction	CII, MFR, SFR	Both		$9,606	$244,110	$914	$4,568	10.5	53.4	$1,200	0.5	$113
High Efficiency Urinal Rebate	CII, MFR, SFR	Indoor		$985	$5,748	$2,295	$2,040	0.4	2.8	$3,150	0.1	$2,961
Cash for Grass Rebate Green Exchange Program	SFR	Outdoor	(c)	$132,592	$236,150	$360,265	$4,323,183	0.4	0.1	$430,601	12.8	$3,369
Cash for Grass Rebate Green Exchange Program	MFR, CII	Outdoor	(c)	$332,841	$592,796	$282,174	$3,386,091	1.2	0.2	$337,264	32.1	$1,051
Rain Water Harvesting Rebate	SFR, MFR, CII	Outdoor		$3,489	$6,213	$12,749	$152,986	0.3	0.0	$14,500	0.6	$4,630

Abbreviations

AFY = acre-feet per year
CII = Commercial, Industrial, and Institutional
MFR = multi-family residential
SFR = Single-family residential
sq ft = square feet
$/AF = dollars per acre-foot

Notes

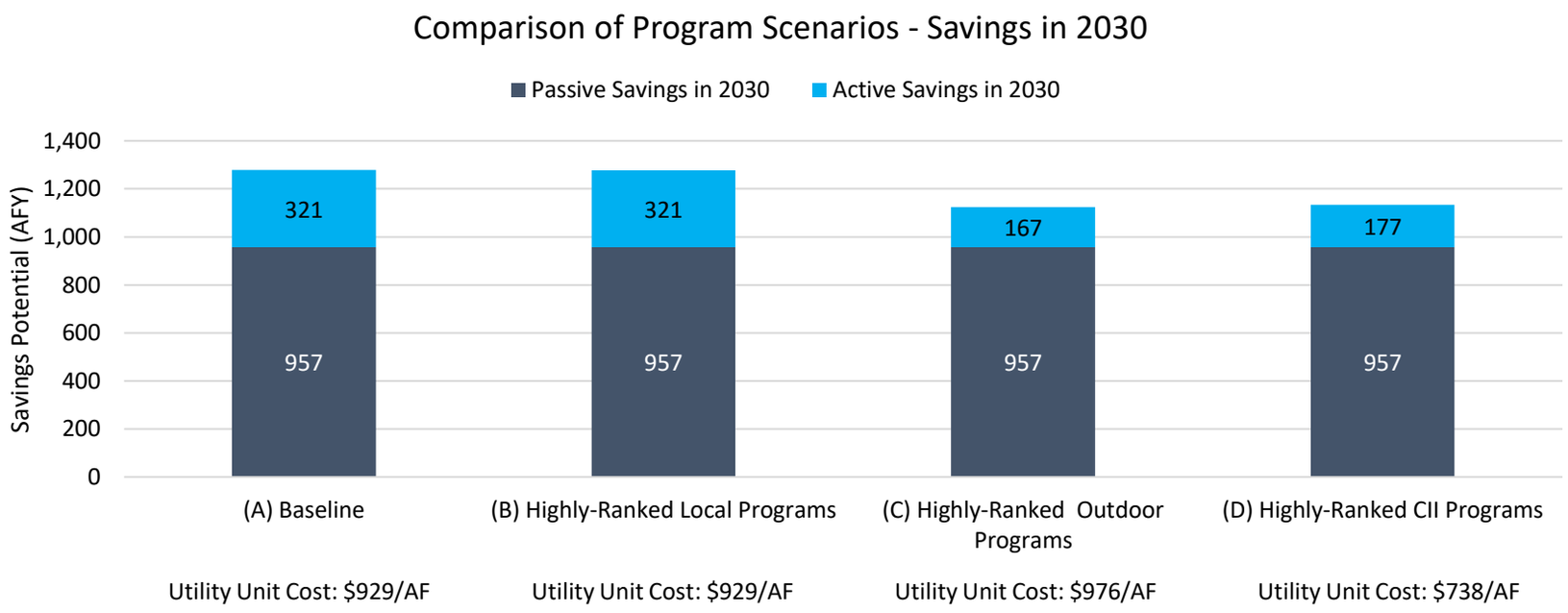
(a) Estimated water savings, benefits, and costs are calculated using the AWE model. Program savings, cost, and implementation rate assumptions used are presented in Appendix B. Utility benefit (i.e., avoided cost of water) is assumed to be the cost of purchasing wholesale water from Sonoma Water. Customer benefit is assumed to be the variable cost of purchasing water from the utility (i.e., variable customer water rates).
(b) For purposes of near-term conservation program analysis, it is assumed that all programs are active from 2026 through 2030.
(c) Program savings are based on the past implementation of program (Section 4.3.2). Program participation sample size of the CII/MFR programs was limited, and thus conservation savings estimates may not be as robust as they would be with a larger sample size.

Table 6-4 Comparison of Program Scenarios – Costs and Savings
City of Santa Rosa, Sonoma-Marin Water Saving Partnership

Scenario (a)	Present Value of Benefits		Present Value of Cost		Benefit to Cost Ratio		Water Savings in 2030 (AFY)	Cumulative Active Water Savings (AF)					Water Utility Cost of Water Saved ($/AF) (b)
	Water Utility	Customers	Water Utility	Customers	Water Utility	Customers		2025	2030	2035	2040	2045	
(A) Baseline	$ 2,830,608	$ 14,219,795	$ 1,816,025	$ 10,281,763	1.6	1.4	321	1,134	1,976	2,322	2,589	2,785	$929
(B) Highly-Ranked Local Programs	$ 2,827,854	$ 14,149,813	$ 1,812,344	$ 10,255,994	1.6	1.4	321	1,133	1,974	2,320	2,587	2,782	$929
(C) Highly-Ranked Outdoor Programs	$ 1,273,857	$ 3,131,364	$ 986,211	$ 8,254,410	1.3	0.4	167	542	1,045	1,186	1,186	1,186	$976
(D) Highly-Ranked CII Programs	$ 1,412,707	$ 6,039,992	$ 753,447	$ 4,065,836	1.9	1.5	177	577	1,088	1,243	1,304	1,350	$738

Abbreviations
AF = acre-feet $/AF = dollars per acre-foot

Notes
(a) For purposes of near-term conservation program analysis, it is assumed that all programs are active from 2026 through 2030. Cumulative water savings achieved beyond 2030 reflect the ongoing benefit of program implementation.
(b) The water utility cost is based on the cumulative savings achieved through 2050 cumulative water savings.



7 CONCLUSIONS

Although there have been no updates to the UWMP regulations since 2020, the MCCWL framework and related regulations will influence the 2025 UWMPs, as they will inform the water demand and conservation planning components. This project forecasted water demand through 2050 in accordance with CWC requirements and evaluated both historical and anticipated implementation of conservation programs.

7.1 Historical, Current, and Projected Water Demand

Water demand projections are developed consistent with CWC § 10631(d)(4)(A), which requires that "Water use projections, where available, shall display and account for the water savings estimated to result from adopted codes, standards, ordinances, or transportation and land use plans identified by the urban water supplier, as applicable to the service area." The assumptions used as the bases for demand projections were developed in close coordination with the City and reflect a land-use based approach consistent with the City's 2050 General Plan and housing element (PlaceWorks, 2023). It should be noted that all demand and conservation projections have limitations and should be considered estimates that require revisiting as factors that affect demands arise, such as economic or population shifts, extreme hydrological conditions, etc.

The methodology used to develop demand projections herein is also consistent with the CWC §10635(b)(4), requirement to consider climate change on projected demands.[13] The City's per account water use declined significantly over the past 15 years as a result of the City's conservation efforts and showed significant response to key events such as the 2014-2017 drought, the 2021-2023 drought, and the COVID-19 pandemic. The demand factors evaluated herein are based on water use during the 2017-2019 period, which assume a rebound in demand following the recent drought and represent a higher level of demand compared to current levels. Thus, the periods used to develop the demand projections reflect conditions representative of the hotter, drier weather expected as a result of climate change.

Although MCCWL Objective water use standards are expected to become more stringent over time, the City is projected to remain in compliance with its Objectives through 2040 based on forecasted population and baseline water use, prior to accounting for active conservation savings. In addition, the City's current estimated indoor residential water use is already lower than the UWUO residential indoor water use standard of 42 GPCD through 2040.

7.2 Conservation Measures Participation, Savings, and Update

Participation data indicate that several of the City's conservation programs, particularly WaterSmart Check-ups, Irrigation Efficiency Rebates, HECW Rebates, Cash for Grass Rebates, HET Rebates, and Efficiency Fixture Direct Installs, have been widely adopted and successful in achieving water savings between 2010 and 2024. Most programs have a lower adoption rate over

[13] CWC §10635(b)(4) requires that suppliers consider plausible changes on projected supplies and demands under climate change conditions specific to their five-year drought risk assessments. Section 4.5 of the draft 2020 UWMP Guidebook more generally recommends that consideration of climate change be incorporated into all demand projections.

the recent five years compared to historical rates, with higher popularity observed during drought periods.

Statistical analysis of residential water use shows that indoor water use in residential customers exhibits lower variability and remaining potential for efficiency gains. In contrast, outdoor water use among SFR customers shows a broader range, indicating that water conservation programs that target outdoor water use, particularly for higher-using customers, could continue to provide benefits.

A difference-in-difference analysis of six selected programs confirms that participants typically reduced water use following participation, consistent with program objectives. However, the magnitude of savings varied across accounts and years, suggesting that estimated savings should be interpreted as general trends rather than precise values.

Spatial and demographic analyses further identified opportunities to expand participation. For SFR customers, the greatest potential lies in the northern and southern portions of the service area and in neighborhoods characterized by lower income, higher rentership, and younger household demographics. For MFR customers, participation in the Cash for Grass Rebate Program could be expanded outside the already saturated northwest area, particularly in areas with pre-1994 buildings and similar socioeconomic characteristics.

Finally, a benefit-cost analysis of future program scenarios shows that all options yield a benefit-to-cost ratio greater than one, meaning program implementation is more cost-effective than purchasing additional water supplies from Sonoma Water. The preferred program portfolio achieves an estimated benefit-to-cost ratio of 1.6, comparable to existing programs (1.6). The benefit-to-cost ratio of outdoor programs is 1.3 and CII programs is 1.9.

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APPENDIX A

Methodology for Estimating Indoor and Outdoor Water Use

Methodology for Estimating Indoor and Outdoor Water Use

This appendix documents the methodology used in Section 3.3 of the *2025 Water Demand and Conservation Measure Update* for the nine participating members of the Sonoma-Marin Saving Water Partnership (Water Contractors) prepared by EKI Environment & Water (EKI).

For customer accounts without dedicated irrigation meters, the amount of water used indoors versus outdoors is not directly measured and must be estimated. Traditionally, indoor and outdoor water use has been estimated using the "minimum winter month" method, which assumes that water use during the lowest-demand winter month is entirely attributable to indoor consumption. However, winter irrigation is common in California and this assumption tends to overestimate indoor water use.

EKI has developed the method below to estimate water use for meters with mixed indoor and outdoor water use (i.e. mixed-use meters, or MUMs) using an annual irrigation scaling factor developed based on data collected from dedicated irrigation meters. This method is consistent with the "Seasonal Adjustment Method" utilized in the Department of Water Resources' residential indoor water use study to inform water use efficiency standards as part of the *Making Conservation a California Way of Life* Legislation (DWR, 2021).

1 DATA SOURCES

The analysis is based on potable water consumption data covering calendar year 2024. While multi-year water consumption data are available, indoor and outdoor use estimates were derived from the most recent complete calendar year (2024) to reflect current usage and seasonal patterns.

The dataset was parsed for the analysis herein and includes the following fields:

- **Year and Month** – Derived from service period or billing date.
- **Sector Group** – Consolidated customer sectors, including Single Family, Multi-family, Commercial/Industrial/Institutional (CII Total), and Irrigation.
- **Consumption** – Monthly water use converted to acre-feet.
- **Water Type** – Only potable water use was included in the analysis.

Potable irrigation accounts were used to infer the seasonal profile of outdoor water use. Estimates of indoor and outdoor use were produced for sector groups where both types of use are present (e.g., Single Family, Multi-family, CII Total).

2 METHODOLOGY

This section describes the method used to estimate the indoor and outdoor components of total annual water use for each sector group.

2.1 Step 1: Identify Analysis Year

The most recent year with complete monthly data (2024) was selected to represent current conditions and ensure seasonal variation is captured accurately.

2.2 Step 2: Calculate Seasonal Scaling Factor

Potable dedicated irrigation meters (DIMs) were assumed to represent purely outdoor water use. Monthly water use in the most recent year (2024) was aggregated for all irrigation accounts (i.e. accounts on DIMs), and a seasonal scaling factor (SF) was calculated as:

$$Scaling\ Factor\ (SF) = \frac{Max\ (monthly\ use)}{Min\ (monthly\ use)}$$

This metric reflects the ratio between peak summer irrigation and baseline winter irrigation, which is assumed to persist year-round at a reduced level. The metric also reflects the local conditions and climatic conditions during 2024. As shown on Figure 2-1, the variations in monthly water use from DIMs generally follow a consistent pattern: highest water use in the summer months and early fall (July through September), lowest water use in the winter month and early spring (January through March).

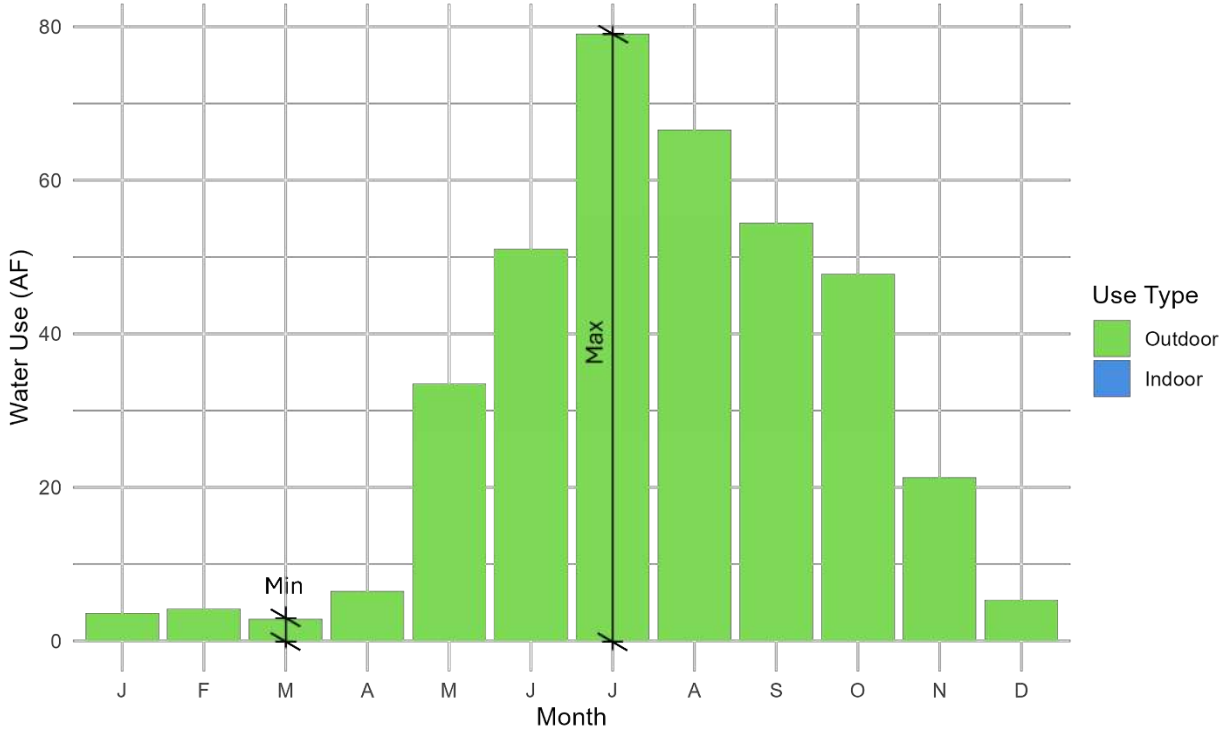


Figure 2-1 Example Irrigation Outdoor Use by DIMs Used to Calculate Scaling Factor

2.3 Step 3: Filter Target Sector Groups

The analysis focuses on three sector groups on MUMs expected to include both indoor and outdoor use:

- Single Family
- Multi-family
- CII Total

Only potable water demand from MUMs is considered.

2.4 Step 4: Extract Seasonal and Annual Demand

Monthly potable water demand by MUMs was aggregated by sector group. The representative low-irrigation month (winter) is selected by finding the minimum water use across the months of January, February, and March. Similarly, the high-irrigation month (summer) is selected by finding the maximum

water use from the months of July, August, and September. Total annual demand was also computed for each sector group.

2.5 Step 5: Estimate Indoor and Outdoor Use

The SF calculated under Step 2 are used to estimate the proportion of water used for irrigation purposes by MUMs. This method assumes that indoor water use is generally consistent over the course of the year and that customers within the Water Contractor's service area experience similar irrigation patterns. This assumption tends to hold more strongly for residential customers. However, for CII customers, although some use water through MUMs for outdoor irrigation, they may also have seasonally variable indoor demands, such as cooling towers. As a result, this method may underestimate indoor use and overestimate outdoor use in service areas with significant CII cooling demands.

Figure 2-2 illustrates the annual water use pattern and the components of the equations below used to derive estimated indoor and outdoor water use for sectors with MUMs.

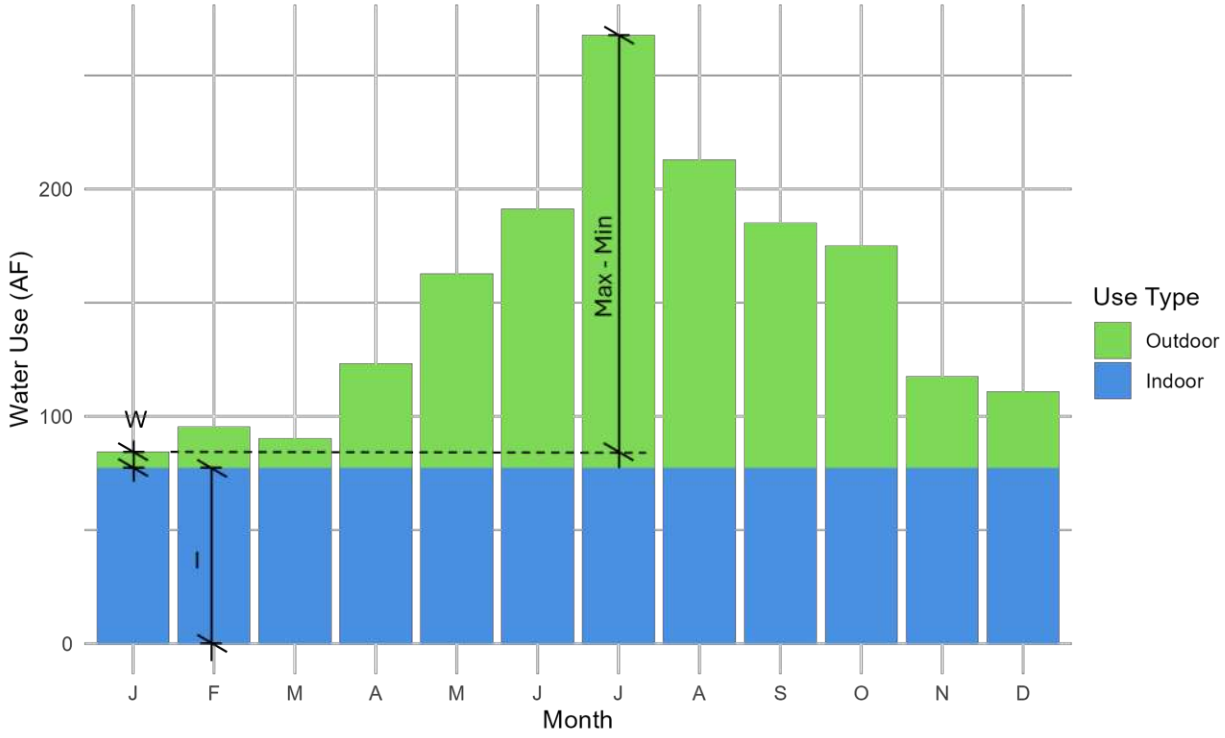


Figure 2-2 Indoor and Outdoor Separation Methodology for Water Use on MUMs

Indoor use was estimated as the month with the least water use in January, February, or March, adjusted to remove residual winter irrigation using the SF.

Winter irrigation is estimated as:

$$SF = \frac{W + (Max - Min)}{W}$$
$$= 1 + \frac{Max - Min}{W}$$
$$\Rightarrow W = \frac{Max - Min}{SF - 1}$$

Where:

- W = Outdoor winter irrigation during the lowest water use month
- Max = Max monthly use in one of July, August, or September
- Min = Min monthly use in January, February, or March
- SF = Scaling factor

Indoor monthly use is then:

$$I = Min - W$$

Indoor annual use is computed as:

$$I \times 12$$

Outdoor annual use is then the residual between total annual use and indoor annual use:

$$Outdoor\ Annual\ Use = Total\ Annual\ Use - Indoor\ Annual\ Use$$

3 ASSUMPTIONS AND LIMITATIONS

- DIMs reflect purely outdoor use, with consistent year-round patterns across groups.
- Low point of outdoor irrigation happens in one of January, February, or March; similarly peak summer irrigation happens in one of July, August, or September.
- Indoor water use is assumed to be consistent throughout the year.
- Customers within each sector group are assumed to exhibit similar usage patterns.
- The scaling factor derived from DIMs is representative of outdoor demand across all MUMs, which is a stronger assumption for residential customers but less so for CII customers due to seasonal cooling demands.

4 REFERENCES

DWR, 2021. *Recommendations for urban water use efficiency standards, variances, performance measures, and annual water use reporting* (Report No. WUES-DWR-2021-01A). California Department of Water Resources. Available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Water-Use-And-Efficiency/2018-Water-Conservation-Legislation/Performance-Measures/UWUE_STD_VAR_PM_REPORT_WUES-DWR-2021-01A_COMPLETE.pdf

APPENDIX B

Conservation Program Savings Assumptions

Table B-1 Conservation Program Savings Assumptions

City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Agency Program Name	Units	Savings Assumption (gpd/unit)	Life of Savings (Years)	Decay Rate (%/Yr)	Free Riders (% activity)	Source(s)
AMI Leak Notifications Program (SFR)	AMI Meter	0.7	1	0%	0%	AWE Tool Conservation Program Library.
AMI Leak Notifications Program (MFR, CII, IRR)	AMI Meter	2.0	1	0%	0%	AWE Tool Conservation Program Library.
SFR WaterSmart Check-up (Indoor) Program	Household	15.5	5	20%	0%	Per detailed conservation savings analysis performed for 2025 Demand/Cons Report.
SFR WaterSmart Check-up (Outdoor) Program	Household	26.9	5	20%	0%	Per detailed conservation savings analysis performed for 2025 Demand/Cons Report.
MFR WaterSmart Check-up (Indoor) Program	Household	11.0	5	20%	0%	AWE Tool Conservation Program Library.
CII WaterSmart Check-up (Indoor) Program	Site	198	5	20%	0%	Calculated based on the potential water savings from CII audits per Reference 3 and typical CII water usage in the service area.
CII/MFR WaterSmart Check-up (Outdoor) Program	Site	893.0	5	20%	0%	AWE Tool Conservation Program Library for Large Landscape Water Audit.
Residential HECW Rebate Program	Washer	10.7	14	0%	0%	(a)
CII and MFR HECW Rebate Program	Washer	85.9	8	0%	0%	Per detailed conservation savings analysis performed for 2020 Demand/Cons Report.
Irrigation Efficiency Rebate (SFR)	Controller	26.1	10	0%	0%	AWE Tool Conservation Program Library for Smart Irrigation Controller Rebate.
Irrigation Efficiency Rebate (CII/MFR)	Controller	727.0	10	0%	0%	AWE Tool Conservation Program Library for Smart Irrigation Controller Rebate.
Pool Cover Rebate	Household	18.3	5	0%	0%	(b)
Rain Water Harvesting Rebate	Household	9.6	5	0%	0%	AWE Tool Conservation Program Library for an average cisterm at approximately 1,000 gallons per household.
Recirculating Hot Water Pump Rebate	Household	5.4	10	0%	0%	Calculated based on the hot water recirculation system savings and system useful life in References 1 and 2.
High Efficiency Toilet Rebate	Toilet	5.0	25	0%	0%	(c)
Efficient Fixture Direct Install Program Residential	Household	31.2	25	0%	0%	AWE Tool Conservation Program Library.
Efficient Fixture Direct Install Program Commercial	Site	52.6	25	0%	0%	AWE Tool Conservation Program Library.
Greywater Rebate	Household	10.9	10	0%	0%	AWE Tool Conservation Program Library.
Sustained Reduction	Site	6,733	25	0%	0%	Estimated per City's record of participants.
High Efficiency Urinal Rebate	Urinal	9.6	25	0%	0%	(d)
SFR Cash for Grass Rebate Green Exchange Program	Square Feet	0.03	10	0%	0%	Per detailed conservation savings analysis performed for 2025 Demand/Cons Report.
CII and MFR Cash for Grass Rebate Green Exchange Program	Square Feet	0.1	10	0%	0%	Per detailed conservation savings analysis performed for 2020 Demand/Cons Report.

Table B-1 Conservation Program Savings Assumptions

City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Abbreviations

AMI = advanced metering infrastructure
AWE = Alliance for Water Efficiency Water Conservation Tracking Tool
CII = commercial, industrial, institutional
gpd = gallons per day
gpf = gallons per flush
HECW = high-efficiency clothes washer
IRR = irrigation
MFR = multi-family residential
SFR = single-family residential

Notes

(a) Provided by City staff and calculated based on replacing 23 gallons per load (gpl) washers with 13 gpl washers and 392 loads per year. This assumption is lower compared to the default in the AWE Tool Conservation Program Library and reflects the typical pre-retrofit appliance stock within the City of Santa Rosa.

(b) Calculated assuming a 500 square foot pool; 95% reduction in evaporation based in Reference 1; the cover is being used properly 50% of the time; and an annual evaporation rate of 45 inches.

(c) Provided by City staff and calculated based on replacing 1.6 gallon per flush (gpf) toilets with 0.8 gpf toilets, 5 flushes per person, 2.5 persons per household and 2 toilets per household. This assumption is lower compared to the default in the AWE Tool Conservation Program Library and reflects the typical pre-retrofit fixture stock within the City of Santa Rosa.

(d) Water savings are estimated based on replacing 1.0 gallon per flush (gpf) urinals with 0.125 gpf urinals, assuming an average of 11 flushes per day. This assumption reflects the typical pre-retrofit fixture stock within the City of Santa Rosa.

References

1. ORNL, 2002. A case study of five homes in Palo Alto, California: Potential for savings using on-demand hot-water recirculation systems (ORNL/TM-2002/245). Oak Ridge National Library.
2. USDOE, 2001. Pump lifecycle costs: A Guide to LLC Analysis for Pumping Systems. U.S. Department of Energy, January 2001.
3. NM OSE, 1999. Water conservation guide for commercial, institutional, and industrial users. New Mexico Office of the State Engineer.
4. AWE, 2021. Water Conservation Tracking Tool. Version 4.0. Alliance for Water Efficiency.
5. EKI, 2020. 2020 Water Demand Analysis and Water Conservation Measure City of Santa Rosa. EKI Environment & Water, Inc., November 2020.

Table B-2 Conservation Program Cost Assumptions

City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Agency Program Name	Units	Utility Cost per Unit	Customer Cost per Unit	Source(s)
AMI Leak Notifications Program (SFR)	AMI Meter	$1.0	$5.5	Utility cost from AWE Tool Conservation Program Library. Customer costs based on Note (a).
AMI Leak Notifications Program (MFR, CII, IRR)	AMI Meter	$1.0	$5.5	Similar to SFR AMI Leak Notifications Program.
SFR WaterSmart Check-up (Indoor) Program	Household	$170	$60	Consistent with 2020 Demand/Cons Report and adjusted to 2025 dollars.
SFR WaterSmart Check-up (Outdoor) Program	Household	$170	$60	Consistent with 2020 Demand/Cons Report and adjusted to 2025 dollars.
MFR WaterSmart Check-up (Indoor) Program	Household	$170	$60	Similar to SFR Indoor Check-up program.
CII WaterSmart Check-up (Indoor) Program	Site	$1,850	$3,000	Consistent with 2020 Demand/Cons Report and adjusted to 2025 dollars.
CII/MFR WaterSmart Check-up (Outdoor) Program	Site	$1,850	$3,000	Consistent with 2020 Demand/Cons Report and adjusted to 2025 dollars.
Residential HECW Rebate Program	Washer	$50	$750	Utility cost based on City's rebate amount. Customer cost based on cost of a low-end ENERGY STAR residential washer model.
CII and MFR HECW Rebate Program	Washer	$350	$1,500	Utility cost based on City's rebate amount. Customer cost based on cost of light ENERGY STAR commercial washer model.
Irrigation Efficiency Rebate (SFR)	Controller	$300	$180	Utility cost based on City's rebate amount. Customer cost consistent with 2020 Demand/Cons Report and adjusted to 2025 dollars.
Irrigation Efficiency Rebate (CII/MFR)	Controller	$450	$600	Utility cost based on City's rebate amount. Customer cost consistent with 2020 Demand/Cons Report and adjusted to 2025 dollars.
Pool Cover Rebate	Household	$50	$200	Utility cost based on City's rebate amount. Assumes a total cost of $250 for a typical pool cover.
Rain Water Harvesting Rebate	Household	$250	$3,000	Utility cost based on City's rebate amount. Customer cost from Marin Municipal Water District's SWSA modeling.
Recirculating Hot Water Pump Rebate	Household	$100	$700	Utility cost based on City's rebate amount. Assumes a total cost of $800 for installation.

Table B-2 Conservation Program Cost Assumptions

City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Agency Program Name	Units	Utility Cost per Unit	Customer Cost per Unit	Source(s)
High Efficiency Toilet Rebate	Toilet	$62.5	$300	Utility cost based on City's rebate amount. Customer cost consistent with 2020 Demand/Cons Report and adjusted to 2025 dollars.
Efficient Fixture Direct Install Program Residential	Household	$450	-	Utility cost based on AWE Tool Conservation Program Library adjusted to 2025 dollars. Assumes no cost to customers.
Efficient Fixture Direct Install Program Commercial	Site	$900	-	Assumes twice the utility cost of residential direct install program and no cost to customers.
Greywater Rebate	Household	$100	$2,000	Utility cost based on City's rebate amount. Customer cost from Marin Municipal Water District's SWSA modeling.
Sustained Reduction	Site	$400	$2,000	Utility cost based on City's rebate amount. Customer cost assumed to be $2,000 every 1,000 gallons reduced.
High Efficiency Urinal Rebate	Urinal	$450	$400	Utility cost based on City's rebate amount. Assumes a total cost of $850 for installation.
SFR Cash for Grass Rebate Green Exchange Program	Square Feet	$1.0	$12	Utility cost based on City's rebate amount. Customer cost from Marin Municipal Water District's SWSA modeling.
CII and MFR Cash for Grass Rebate Green Exchange Program	Square Feet	$1.0	$12	Utility cost based on City's rebate amount. Customer cost from Marin Municipal Water District's SWSA modeling.

Abbreviations

AMI = advanced metering infrastructure
AWE = Alliance for Water Efficiency Water Conservation Tracking To
CII = commercial, industrial, institutional
gpd = gallons per day
gpf = gallons per flush
HECW = high-efficiency clothes washer
IRR = irrigation
MFR = multi-family residential
SFR = single-family residential

Notes

(a) An average household leak is estimated to be 180 gallons per week per Reference 3. It is assumed that fixing such leak costs $200, averaged across the entire customer base with AMI.

References

1. AWE, 2021. Water Conservation Tracking Tool. Version 4.0. Alliance for Water Efficiency.
2. EKI, 2020. 2020 Water Demand Analysis and Water Conservation Measure City of Santa Rosa. EKI Environment & Water, Inc., November 2020.
3. USEPA, 2025. Water Sense Statistics and Facts, https://www.epa.gov/watersense/statistics-and-facts, accessed October 14, 2025.

Table B-3 Conservation Program Implementation Rate Assumptions

City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Agency Program Name	Implementation Rate	Unit	Source(s)
AMI Leak Notifications Program	-	/ year	Assumes full AMI implementation.
Residential HECW Rebate Program	41	rebate / year	Based on past program participation rates from 2020–2025.
CII and MFR HECW Rebate Program	4	/ year	Based on past program participation rates from 2015–2019 as no participation was reported for 2020-2025.
SFR WaterSmart Check-up (Indoor) Program	96	/ year	Based on past program participation rates from 2020–2025.
SFR WaterSmart Check-up (Outdoor) Program	126	/ year	
MFR WaterSmart Check-up (Indoor) Program	75	/ year	
CII/MFR WaterSmart Check-up (Outdoor) Program	75	/ year	
CII WaterSmart Check-up (Indoor) Program	23		
Irrigation Efficiency Rebate (SFR)	18	rebate / year	
Irrigation Efficiency Rebate (CII/MFR)	6	rebate / year	
Pool Cover Rebate	4	rebate / year	
Rain Water Harvesting Rebate	12	gal of storage / year	
Recirculating Hot Water Pump Rebate	9	rebate / year	
High Efficiency Toilet Rebate	8	rebate / year	
Efficient Fixture Direct Install Program Residential	271	/ year	
Efficient Fixture Direct Install Program Commercial	43	/ year	
Greywater Rebate	2	rebate / year	
Sustained Reduction	1	rebate / year	
High Efficiency Urinal Rebate	1	rebate / year	
SFR Cash for Grass Rebate Green Exchange Program	86,120	sq ft / year	
CII and MFR Cash for Grass Rebate Green Exchange Program	67,453	sq ft / year	

Abbreviations

AMI = advanced metering infrastructure
AWE = Alliance for Water Efficiency Water Conservation Tracking Tool
CII = commercial, industrial, institutional
IRR = irrigation
MFR = multi-family residential
SFR = single-family residential
sq ft = square feet

APPENDIX C

Methodology for Water Conservation Program Savings Analyses

Methodology for Water Conservation Program Savings Analyses

This Appendix describes the methodology used to estimate water conservation program savings based on customer billing data, for the analyses presented in report Section 4.3.2, *Estimated Water Savings for Six Selected Programs Based on Customer Billing Data*.

Water use savings associated with conservation programs are typically estimated based on literature values, which may or may not accurately capture the specific ways customers in a specific area (i.e., City of Santa Rosa [City]) use water. Therefore, City customer billing data were analyzed in order to assess the amount of water typically saved through implementation of each of the six selected conservation programs. Water use by program participants was compared to water use by a representative cohort over the same time period, that was stratified based on key criteria. Water use savings were estimated for the six conservation programs identified below:

1. Commercial, industrial and institutional (CII) and multi-family residential (MFR) Cash for Grass Rebate Green Exchange Program
2. Single family residential (SFR) Cash for Grass Rebate Green Exchange Program
3. SFR WaterSmart Indoor Check-up Program
4. SFR WaterSmart Outdoor Check-up Program
5. CII/MFR Outdoor Check-up Program
6. CII Indoor Check-up Program

Specifically, water use before and after implementation of a given action (e.g., device replacement or turf removal) by program participants is compared to the water use by a cohort of accounts who have not participated in the same or other programs in the given time frame. The incremental volume of water saved by program participants compared to that of the cohort group can then be attributed to program participation, as other factors have been normalized. This analytical technique is a version of the "Difference-in-Differences Estimation" method. The Difference-in-Differences Estimation method is a standard method used in economics and social science for quantitatively evaluating observational study data by studying the differential effect of a treatment, or in this case participation in a given program as compared to a "control group," when a true controlled experiment cannot be performed (Columbia Public Health, 2013).

By comparing water use over time by program participants to a cohort group and identifying the incremental change in water use due to program participation, this methodology controls for variations in water use due to climatic, economic, and other temporally related factors. By stratifying (or grouping)the cohort group based on key factors (i.e., Census Block Group or neighborhood for SFR programs), this method also effectively controls for geographic-linked water use influencing factors, such as house and yard size, housing age, general socio-economic factors, general landscape management factors, etc.

1 METHODOLOGY

1.1 Data Cleanup

The following steps were performed on program participation and water use data prior to the analysis

- Exact duplicate program participation records were removed;
- Missing account numbers in program data were backfilled using meter numbers from billing data;
- Customer sectors were assigned based on account type and meter billing codes;

- Program names (e.g., SFR Cash for Grass) were verified against account sector (SFR), corrections were made as needed;
- Outliers in billed usage (>99th percentile) were excluded;
- Complete billing records were required-accounts missing any months or with zero-use years were excluded.

These steps represent refinements to the prior 2020 analysis, adding systematic outlier removal, duplicate record resolution, and account backfilling for improved accuracy and consistency.

1.2 Participant Sample Groups

In order to estimate water savings attributable to a single conservation program, participant sample groups for this analysis were limited to accounts that participated in only one program[1], and who participated in that program in only one year (e.g., did not receive several rebates from the same program over several years), except as indicated in savings results tables, as appropriate. The participant sample groups were further limited to just those accounts that had active water use over the study period. Active accounts were identified as those who received twelve water bills and had non-zero water use in a given year.

1.3 Comparison Cohort Sample Groups

Accounts included in the cohort groups are limited to those accounts that had not participated in any program based on available data and that meet the same active account thresholds as described above for the participant sample groups (i.e., received twelve bills per year and non-zero annual water use)[2]. It is possible that members of the cohort group participated in a program that was not included in this study; however, given the large number of accounts included in these cohort groups the effect of participation in other programs would be expected to be minimal.

Although not participants in a specific program, a portion of the cohort group members would be expected to have replaced older water-using devices with more efficient models through natural turnover. In addition, during recent drought periods, many customers substantially reduced water use through voluntary conservation actions. As a result, the estimated program savings based on this cohort comparison may be understated, since the cohort group itself likely achieved significant independent water savings, leading to a more conservative estimate of program effectiveness.

1.4 Study Periods

Since account-level water use billing data are available from 2010 to 2024, the participation data from 2013 to 2021 are analyzed so that two to three years of water use data can be used to capture the average water use before and after the participation year and excluding the participation year from the analysis.

[1] Participation data collected for the CII/MFR high efficiency clothes washer (HECW) program for the 2020 Demand and Conservation Study was used to eliminate accounts that participated in multiple programs.
[2] Participation data collected for the CII/MFR HECW program for the 2020 Demand and Conservation Study was considered when identifying accounts for the cohort group.

1.5 Stratification

For SFR accounts, cohorts were stratified by Census Block Group, while for CII and MFR accounts, cohorts were stratified by sector (e.g., MFR, MFR irrigation, commercial, industrial, institutional, and CII irrigation). This ensured comparisons accounted for geographic and sector-specific factors.

1.6 Water Savings Calculation

For each active account, the average annual water use for a period of three years prior to program participation is compared to the average annual water use in the two to three years following program participation, dependent on available data. The change in water use by program participants is then compared to that of the cohort group over the same time period. The difference between the change in water use of the participants and the change in water use of the cohorts is the water savings due to the given conservation program. A positive average water savings suggests the program resulted in water savings, while a negative average water savings suggests the program was not successful in saving water.

2 REFERENCES

Columbia Public Health, 2013. Difference in Difference Estimation. Columbia Public Health, https://www.publichealth.columbia.edu/research/population-health-methods/difference-difference-estimation#Overview, accessed 28 September 2020.

APPENDIX D

Prioritization and Screening of Future Water Conservation Measures

Table E-1 Regional Prioritization of Conservation Measures and Programs

Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program
	Regional	Local	Regional	Local	
AGENCY ACTIONS AND WATER RATES					
Increase Enforcement of Customer Pressure Reducing Valve (PRV) Requirement	1.5	1.6	25%	25%	✗
Increase Enforcement of Indoor Fixture Retrofit at Time of Sale	1.7	2.4	33%	56%	✗
Increase Enforcement of State Water Waste Regulations	2.0	2.6	38%	63%	✗
Rate Structure Evaluation	2.0	2.0	25%	50%	✗
Regional UHET and/or Urinal Bulk Purchase Program	1.3	1.	11%	0%	✗
Water Budgeting/Monitoring for Large Landscape Accounts	1.8	2.9	33%	67%	✗
Establish Separate Pricing Structure for Irrigation Accounts	1.4	2.7	13%	50%	✗
Implementation or Modification of Tiered Water Rates (Conservation Pricing)	2.4	3.3	38%	75%	✗
Water Budget Based Billing for All Customers	1.3	1.9	11%	33%	✗
Water Budget Based Billing for Only Irrigation Customers	1.7	2.9	22%	56%	✗
Install AMI for Existing Accounts	2.6	4.3	25%	88%	✗
Install AMI for High Water Users and Large Landscape Accounts	2.8	4.4	50%	88%	✗
Install AMI in New Development	2.4	4.3	38%	88%	✗
End Point Leak Detection and Flow Monitoring	2.1	3.0	25%	50%	✗
CalWEP District Distribution Program	1.8	2.3	33%	33%	✗
Behavior Based Customer Messaging Platforms	1.9	2.9	25%	63%	✗
Average by Program Type	1.9	2.8			
PUBLIC OUTREACH AND EDUCATION					
Water Use Surveys/Audits - CII	2.3	2.9	44%	56%	✓
Water Use Surveys/Audits - MFR	2.7	3.1	67%	67%	✓
Water Use Surveys/Audits - SFR	2.6	3.0	67%	67%	✗
Garden Sense Consultation	3.1	2.3	78%	56%	✓
Educational Workshops	3.3	2.7	78%	56%	✓

Table E-1 Regional Prioritization of Conservation Measures and Programs

Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program
	Regional	Local	Regional	Local	
Garden Tour	3.2	1.6	78%	11%	✓
SFR Home Water Report	2.0	2.8	44%	67%	✗
Promote Green Building and Certification	2.4	1.3	56%	11%	✗
Provide Support with Smart Irrigation Controller Setup	2.7	2.6	67%	56%	✗
Public Outreach through Print & Electronic Media - Focused on Indoor Conservation	3.7	3.4	89%	89%	✓
Public Outreach through Print & Electronic Media - Focused on Outdoor Irrigation	4.4	4.1	100%	89%	✓
Promote QWEL Training (Qualified Water efficient Landscaper)	3.9	2.6	89%	33%	✓
School Education Programs	4.0	2.6	100%	67%	✓
Do-It-Yourself Home Energy and Water Savings Toolkit	3.2	2.2	78%	44%	✓
Average by Program Type	3.1	2.7			
DEVICE-BASED AND FINANCIAL INCENTIVE PROGRAMS					
High Efficiency Faucet Aerator / Showerhead Giveaway - CII Customers	2.4	3.1	44%	56%	✗
High Efficiency Faucet Aerator / Showerhead Giveaway - Residential Customers	2.7	4.0	56%	89%	✗
Toilet Flapper Giveaway - Residential and CII	2.2	3.0	44%	67%	✗
UHET Direct Installation - Residential and CII	1.7	2.2	33%	33%	✗
Urinal Direct Installation - CII	1.7	2.0	44%	33%	✗
Thermostatic Shut-Off Valve Showerheads/Tub Spouts Rebates	1.7	1.8	33%	33%	✗
HET (<1.28 gal/flush) Replacement Rebates	2.3	2.6	44%	44%	✗
High Efficiency Urinal (<0.25 gal/flush) Replacement Rebates - CII	2.1	2.6	44%	44%	✗
Plumber Initiated UHET and / or HEU Retrofit Program	1.7	2.0	22%	22%	✗
Direct Install of Efficient Indoor Fixtures - Commercial and Industrial	1.9	2.4	33%	44%	✗
Direct Install of Efficient Indoor Fixtures - Government Buildings	2.1	2.4	44%	44%	✗
Direct Install of Efficient Indoor Fixtures - Low Income Residential	2.3	2.9	44%	56%	✗
Direct Install of Efficient Indoor Fixtures - Residential	2.3	2.7	44%	44%	✗

Table E-1 Regional Prioritization of Conservation Measures and Programs

Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program
	Regional	Local	Regional	Local	
High Efficiency Clothes Washer Install - Low Income Residential Customers	1.6	1.1	22%	11%	✗
High Efficiency Clothes Washer Rebate - Residential	3.1	3.1	67%	67%	✗
High Efficiency Clothes Washer Rebate Program - CII	2.0	2.8	44%	78%	✗
Efficient Dishwasher Rebates	1.9	1.9	44%	44%	✗
Indoor Fixture Program For Hotels & Motels	2.0	2.8	44%	67%	✗
Indoor Fixture Program For Schools	2.1	2.0	44%	33%	✗
Water Savings Incentive Program for CII	1.8	2.9	33%	78%	✗
Nonresidential Incentive for Self-closing or Metering Faucets	1.9	2.6	22%	44%	✗
Laminar Flow Restrictor Rebate for Health Care Related Facilities	1.9	2.8	22%	67%	✗
Autoclave (Steam-Sterilizer) Retrofit Rebates	1.3	1.4	11%	22%	✗
Air Cooled Ice Machine Rebates	1.7	1.9	22%	44%	✗
Connectionless Food Steamer Rebates	2.0	1.9	33%	44%	✗
Commercial Kitchen High Efficiency Dishwasher Rebate	1.3	1.8	11%	33%	✗
Dipper Well Rebates	2.2	2.3	44%	67%	✗
Hot Water on Demand Pump System Rebate/ Hot Water Recircling System	1.7	2.2	33%	56%	✗
Dry Vacuum Pumps	1.3	1.9	11%	44%	✗
Ozone Laundry Washer Rebate - CII	1.6	2.1	22%	56%	✗
Plumbing Flow Control Valve - CII (Faucets and Showerheads)	1.9	2.7	22%	56%	✗
Incentivize Cooling Tower Upgrades	1.3	2.1	11%	56%	✗
Rebates for Conductivity Controllers on Cooling Towers	1.6	2.1	22%	56%	✗
Sustained Reduction, or rebates for any CII project which demonstrates water savings	1.6	2.0	22%	33%	✗
Landscape Conversion or Turf Removal - MFR and CII	3.2	4.7	67%	100%	✗
Landscape Conversion or Turf Removal - SFR	3.3	4.8	67%	100%	✗
Mulch Rebate	2.4	3.4	44%	67%	✗

Table E-1 Regional Prioritization of Conservation Measures and Programs

Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program
	Regional	Local	Regional	Local	
Incentivize Irrigation Equipment Upgrades - SFR	2.0	3.4	33%	67%	✗
Commerical Landscape Irrigation Improvement Program (CLIIP) Rebates	2.4	3.5	50%	75%	✗
Rotating Sprinkler Nozzle Giveaway	2.4	2.8	56%	56%	✗
Nozzle Replacement Irrigation - Residential	1.9	2.9	33%	44%	✗
Nozzle Replacement Irrigation CII - Large Landscape	1.9	3.0	33%	56%	✗
In-Stem Flow Regulators	1.9	2.1	33%	33%	✗
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - Large Landscape	1.9	2.3	44%	44%	✗
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - SFR	1.9	2.7	44%	44%	✗
Soil Moisture Sensor Giveaway	2.0	2.1	44%	22%	✗
Soil Moisture Sensor Rebate	1.9	2.0	44%	22%	✗
Pilot Spring Irrigation Repairs Rebate	2.0	2.2	44%	33%	✗
Rain Barrel Rebate	2.2	3.1	44%	67%	✗
Rain Barrel Rebate - MFR & Large Landscapes	2.0	2.9	33%	56%	✗
Incentivize Gray Water Retrofit for Existing SFR Customers	1.9	2.7	22%	56%	✗
Incentivize Gray Water Systems for New CII Development	1.8	1.9	22%	33%	✗
Incentivize Submetering for Existing Customers - MFR, CII	1.7	2.4	33%	56%	✗
Incentivize Submetering of Cooling Towers for Existing Customers	1.1	1.9	0%	33%	✗
Flow Sensor Rebate Irrigation System	1.7	2.3	33%	44%	✗
SFR Wireless Flow Monitor	1.7	2.0	33%	33%	✗
Incentivize Replacement of Pressure Reducing Valves (PRVs) with 60-70 psi PRVs	1.4	1.7	11%	22%	✗
Pool Removal Rebates	1.8	2.6	22%	44%	✗
Swimming Pool and Hot Tub Cover Rebates	1.6	2.7	33%	56%	✗
Tiered Water Rate Exemption Assitance Program	1.0	1.4	0%	11%	✗
Average by Program Type	1.9	2.5			

Table E-1 Regional Prioritization of Conservation Measures and Programs

Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program
	Regional	Local	Regional	Local	
POLICIES AND REGULATIONS					
Demand Offset/Water Neutral Policy for Large New Developments	2.7	3.7	44%	78%	✗
Prohibit Once through Cooling Systems	2.7	3.9	44%	78%	✗
Require <0.25 gal/flush Urinals in New Development	1.6	1.9	22%	33%	✗
Require <1.0 gal/flush Toilets in New Development	2.1	3.1	33%	56%	✗
Require Cooling Tower Retrofits	2.2	2.6	44%	56%	✗
Require High Efficiency Clothes Washers in New Development	1.7	2.6	22%	44%	✗
Require Hot Water on Demand / Structured Plumbing in New Residential Development	2.0	2.4	44%	56%	✗
Require Irrigation Designers / Installers be Certified (QWEL)	1.6	1.9	22%	33%	✗
Require On-Site Water Reuse Systems (Grey Water or Black Water) for Large CII Developments	1.8	1.9	33%	33%	✗
Require Plumbing for Gray Water in New SFR Development	2.2	1.9	33%	33%	✗
Require Plumbing for Recycled Water in New CII Development	1.6	3.0	11%	56%	✗
Require Plumbing for Recycled Water in New MFR Development	1.8	2.3	33%	33%	✗
Require Rain Barrels in New Development	1.8	2.0	33%	44%	✗
Require Submetering by Unit for Existing Commercial Customers	1.8	2.1	33%	44%	✗
Require Submetering by Unit for New Commercial Developments	1.6	2.8	22%	67%	✗
Require Submetering for New MFR Developments	2.1	2.4	44%	44%	✗
Require Submetering for New Mobile Home Park Developments	2.2	2.1	33%	44%	✗
Require Submetering of Cooling Towers for Existing Customers	1.8	2.3	22%	33%	✗
Require Submetering of Cooling Towers for New Development	1.1	2.1	0%	33%	✗
Require Submetering of Existing MFR (and Mobile Home Park) Customers	1.3	1.7	11%	22%	✗
Require Submetering of Landscaping for Existing MFR and Commercial Customers	1.3	2.0	11%	33%	✗
Require Submetering of Landscaping for New MFR and Commercial Developments	1.8	2.8	11%	44%	✗
Require Swimming Pool and Hot Tub Covers	1.6	2.4	11%	33%	✗

Table E-1 Regional Prioritization of Conservation Measures and Programs

Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)		Preference (b)		Current SMSWP Program
	Regional	Local	Regional	Local	
Require Water Efficiency Plan Reviews for New CII Development	1.8	2.8	22%	56%	✗
Require Weather Adjusting Smart Irrigation Controllers, Rain Sensors, and/or Soil Moisture Sensors in New Development	1.8	3.1	22%	56%	✗
Restrict Landscape Irrigation to Designated Days/Times	1.3	2.1	11%	33%	✗
Water Conserving Landscape and Irrigation Codes, More Stringent than MWELO	2.2	3.6	33%	67%	✗
Water Waste Ordinance	2.7	4.2	33%	78%	✗
Average by Program Type	1.9	2.6			

Abbreviations:

AMI = advanced metering infrastructure
CalWEP = California Water Efficiency Partnership
CII = commercial, industrial, institutional
COM = commercial
HEU = High-Efficiency Urinals
IRR = irrigation
MFR = multi-family residential
MWELO = Model Water Efficient Landscape Ordinance
PRV = pressure reducing valve
SFR = single-family residential
SMSWP = Sonoma-Marin Saving Water Partnership
UHET = ultra high efficiency toilet

Notes:

(a) Each Water Contractor was asked to rank each conservation program or measure in terms of priority as a regionally-administered program, and as a locally administered program, where 5 indicated highest priority and 1 indicated the lowest priority. Results are presented as an average of the responses of all nine Water Contractors.

(b) Presents the percentage of Water Contractors who indicated a priority of greater or equal to 3 for regional or local implementation.

Table E-2 Prioritization of Conservation Measures and Programs

City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Local Program
AGENCY ACTIONS AND WATER RATES						
Increase Enforcement of Customer Pressure Reducing Valve (PRV) Requirement	1	All	X	X	Water loss; Irrigation	No
Establish Separate Pricing Structure for Irrigation Accounts	5	IRR		X	Irrigation	Yes, currently
Implementation or Modification of Tiered Water Rates (Conservation Pricing)	5	All	X	X	All	Yes, currently
Rate Structure Evaluation	1	All	X	X	All	No
Regional UHET and/or Urinal Bulk Purchase Program	1	All	X		Toilet / Urinal	No
Water Budget Based Billing for Only Irrigation Customers	5	CII, IRR		X	Irrigation	Yes, currently
Install AMI for Existing Accounts	5	All	X	X	Water loss; Irrigation	Yes, currently
Install AMI for High Water Users and Large Landscape Accounts	5	All		X	Water loss; Irrigation	Yes, currently
Water Budget Based Billing for All Customers	2	All	X	X	All	No
Install AMI in New Development	5	All	X	X	Water loss; Irrigation	Yes, currently
Increase Enforcement of Indoor Fixture Retrofit at Time of Sale	3	All	X	X	Toilet, Urinal, Faucet, Showerhead	Yes, currently
Increase Enforcement of State Water Waste Regulations	3	All	X		Irrigation	Yes, currently
Behavior Based Customer Messaging Platforms	3	All	X	X	All	Yes, currently
End Point Leak Detection and Flow Monitoring	1	All	X	X	Water loss; Irrigation	No
CalWEP District Distribution Program	1	SFR, MFR, COM	X	X	All	No
Water Budgeting/Monitoring for Large Landscape Accounts	5	IRR	X	X	Irrigation	Yes, currently
PUBLIC OUTREACH AND EDUCATION						
Water Use Surveys/Audits - CII	5	CII	X	X	All	Yes, currently
Water Use Surveys/Audits - MFR	5	MFR	X		All	Yes, currently
Water Use Surveys/Audits - SFR	5	SFR	X	X	All	Yes, currently
Garden Sense Consultation	1	SFR		X	All Outdoor	Yes, currently

Table E-2 Prioritization of Conservation Measures and Programs

City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Local Program
Educational Workshops	5	All		X	All Outdoor	Yes, currently
Garden Tour	1	SFR		X	All Outdoor	Yes, currently
Provide Support with Smart Irrigation Controller Setup	4	All		X	Irrigation	No
Promote Green Building and Certification	1	CII	X	X	All	No
Public Outreach through Print & Electronic Media - Focused on Indoor Conservation	4	All	X		All Indoor	Yes, currently
Public Outreach through Print & Electronic Media - Focused on Outdoor Irrigation	4	All		X	Irrigation	Yes, currently
SFR Home Water Report	3	SFR	X	X	All	Yes, currently
School Education Programs	3	SFR, MFR	X	X	All	Yes, currently
Promote QWEL Training (Qualified Water efficient Landscaper)	2	All		X	All Outdoor	Yes, currently
DEVICE-BASED AND FINANCIAL INCENTIVE PROGRAMS						
High Efficiency Faucet Aerator / Showerhead Giveaway - CII Customers	5	CII	X		Faucet, Showerhead	Yes, currently
High Efficiency Faucet Aerator / Showerhead Giveaway - Residential Customers	5	SFR, MFR	X		Faucet, Showerhead	Yes, currently
Toilet Flapper Giveaway - Residential and CII	5	All	X		Toilet	Yes, currently
UHET Direct Installation - Residential and CII	5	CII	X		Toilet	Yes, currently
Urinal Direct Installation - CII	5	CII	X		Urinal	Yes, currently
Thermostatic Shut-Off Valve Showerheads/Tub Spouts Rebates	1	SFR, MFR, CII	X		Shower	No
HET (<1.28 gal/flush) Replacement Rebates	1	SFR, MFR	X		Toliet	No
High Efficiency Urinal (<0.25 gal/flush) Replacement Rebates - CII	5	CII	X		Urinal	Yes, currently
Plumber Initiated UHET and / or HEU Retrofit Program	5	All	X		Toilet / Urinal	Yes, currently
Direct Install of Efficient Indoor Fixtures - Commercial and Industrial	5	CII	X		Toilet, Urinal, Faucet, Showerhead	Yes, currently
Direct Install of Efficient Indoor Fixtures - Government Buildings	5	CII	X		Toilet, Urinal, Faucet,	Yes, currently

Table E-2 Prioritization of Conservation Measures and Programs

City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Local Program
Direct Install of Efficient Indoor Fixtures - Low Income Residential	5	SFR, MFR	X		Toilet, Faucet, Showerhead	Yes, currently
Direct Install of Efficient Indoor Fixtures - Residential	5	SFR, MFR	X		Toilet, Faucet, Showerhead	Yes, currently
Do-It-Yourself Home Energy and Water Savings Toolkit	1	SFR	X	X	All	Yes, currently
High Efficiency Clothes Washer Install - Low Income Residential Customers	1	SFR, MFR	X		Clothes Washer	No
High Efficiency Clothes Washer Rebate - Residential	1	SFR, MFR	X		Clothes Washer	Yes, currently
Indoor Fixture Program For Hotels & Motels	5	CII	X		All Indoor	Yes, currently
Efficient Dishwasher Rebates	1	SFR	X		Dishwashers	No
Water Savings Incentive Program for CII	5	CII	X		All Indoor	Yes, currently
Landscape Conversion or Turf Removal - MFR and CII	5	MFR, CII		X	Irrigation	Yes, currently
Landscape Conversion or Turf Removal - SFR	5	SFR		X	Irrigation	Yes, currently
Incentivize Irrigation Equipment Upgrades - SFR	5	SFR		X	Irrigation	Yes, currently
Rain Barrel Rebate	5	SFR		X	Irrigation	Yes, currently
Rain Barrel Rebate - MFR & Large Landscapes	5	MFR, CII		X	Irrigation	Yes, currently
Incentivize Submetering for Existing Customers - MFR, CII	5	MFR, COM, IRR		X	All Indoor	Yes, currently
Incentivize Submetering of Cooling Towers for Existing Customers	5	CII	X		Cooling Towers	Yes, currently
Pool Removal Rebates	5	SFR, MFR		X	Pool/Hot Tub	Yes, currently
Swimming Pool and Hot Tub Cover Rebates	5	SFR, MFR		X	Pool/Hot Tub	Yes, currently
Hot Water on Demand Pump System Rebate/ Hot Water Recircling System	1	SFR, MFR	X		Hot Water	Yes, previously
High Efficiency Clothes Washer Rebate Program - CII	4	CII	X		Clothes Washer	Yes, currently
Sustained Reduction, or rebates for any CII project which demonstrates water savings	4	CII	X	X	All	Yes, currently
Incentivize Gray Water Retrofit for Existing SFR Customers	4	SFR		X	Irrigation / Gray Water	Yes, currently
Flow Sensor Rebate Irrigation System	4	SFR, MFR		X	Irrigation	Yes, currently

Table E-2 Prioritization of Conservation Measures and Programs

City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Local Program
Nonresidential Incentive for Self-closing or Metering Faucets	3	CII	X		Faucet	Yes, currently
Laminar Flow Restrictor Rebate for Health Care Related Facilities	3	Institutional	X		Faucet	Yes, currently
Autoclave (Steam-Sterilizer) Retrofit Rebates	3	CII	X		CII Equipment	Yes, currently
Air Cooled Ice Machine Rebates	3	CII	X		CII Equipment	Yes, currently
Mulch Rebate	2	SFR		X	Irrigation	No
Connectionless Food Steamer Rebates	3	CII	X		CII Equipment	Yes, currently
Commerical Landscape Irrigation Improvement Program (CLIIP) Rebates	2	Commercial		X	Irrigation	No
Rotating Sprinkler Nozzle Giveaway	2	All		X	Irrigation	No
Nozzle Replacement Irrigation - Residential	2	SFR, MFR		X	Irrigation	No
Nozzle Replacement Irrigation CII - Large Landscape	2	CII		X	Irrigation	No
In-Stem Flow Regulators	2	Commercial		X	Irrigation	No
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - Large Landscape	1	MFR, CII		X	Irrigation	No
Smart Irrigation Controller (Weather-Based Irrigation Controller) Giveaway - SFR	1	SFR		X	Irrigation	No
Soil Moisture Sensor Giveaway	1	All		X	Irrigation	No
Soil Moisture Sensor Rebate	1	All		X	Irrigation	No
Pilot Spring Irrigation Repairs Rebate	1	MFR, COM, IRR		X	Irrigation	No
Commercial Kitchen High Efficiency Dishwasher Rebate	3	Commercial	X		Dishwashers	Yes, currently
Dipper Well Rebates	3	CII	X		CII Equipment	Yes, currently
Dry Vacuum Pumps	3	CII	X		CII Equipment	Yes, currently
Ozone Laundry Washer Rebate - CII	3	CII	X		Clothes Washer	Yes, currently
Plumbing Flow Control Valve - CII (Faucets and Showerheads)	3	Commercial	X		Faucet	Yes, currently
Incentivize Cooling Tower Upgrades	3	CII	X		Cooling Towers	Yes, currently

Table E-2 Prioritization of Conservation Measures and Programs

City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Local Program
Rebates for Conductivity Controllers on Cooling Towers	3	CII	X		Cooling Towers	Yes, currently
SFR Wireless Flow Monitor	1	SFR	X	X	Water Loss	No
Incentivize Gray Water Systems for New CII Development	3	CII		X	Irrigation / Gray Water	Yes, currently
Indoor Fixture Program For Schools	2	CII	X		All Indoor	Yes, currently
Incentivize Replacement of Pressure Reducing Valves (PRVs) with 60-70 psi PRVs	1	All	X	X	Water loss; Irrigation	Yes, currently
Tiered Water Rate Exemption Assitance Program	1	SFR	X	X	Toilet, Faucet, Showerhead, Clothes Washer, Irrigation	No
POLICIES AND REGULATIONS						
Demand Offset/Water Neutral Policy for Large New Developments	5	All	X	X	All	Yes, currently
Prohibit Once through Cooling Systems	5	CII	X	X	CII Equipment	Yes, currently
Require <0.25 gal/flush Urinals in New Development		CII	X		Urinal	No
Require <1.0 gal/flush Toilets in New Development	5	All	X		Toilet	Yes, currently
Require Cooling Tower Retrofits	1	CII	X		Cooling Towers	No
Require High Efficiency Clothes Washers in New Development	1	SFR, MFR	X		Clothes Washer	No
Require Hot Water on Demand / Structured Plumbing in New Residential Development	1	SFR, MFR	X		Shower/Sink	No
Require Irrigation Designers / Installers be Certified (QWEL)	1	All		X	Irrigation	No
Require On-Site Water Reuse Systems (Grey Water or Black Water) for Large CII Developments	1	CII		X	Irrigation / Recycled Water	No
Require Plumbing for Gray Water in New SFR Development	1	SFR		X	Irrigation / Gray Water	No
Require Plumbing for Recycled Water in New CII Development	1	CII		X	Irrigation / Recycled Water	No
Require Plumbing for Recycled Water in New MFR Development	1	MFR		X	Irrigation / Recycled Water	No
Require Rain Barrels in New Development	1	SFR		X	Irrigation	No

Table E-2 Prioritization of Conservation Measures and Programs

City of Santa Rosa, Sonoma-Marin Saving Water Partnership

Conservation Measure/Program	Prioritization (a)	Sector	Indoor	Outdoor	Primary End Use	Local Program
Require Submetering by Unit for Existing Commercial Customers	1	CII	X		All Indoor	No
Require Submetering by Unit for New Commercial Developments	5	CII	X		All Indoor	Yes, currently
Require Submetering for New MFR Developments	5	MFR	X		All Indoor	Yes, currently
Require Submetering for New Mobile Home Park Developments	1	MFR	X		All Indoor	No
Require Submetering of Cooling Towers for Existing Customers	1	CII	X		Cooling Towers	No
Require Submetering of Cooling Towers for New Development	1	CII	X		Cooling Towers	No
Require Submetering of Existing MFR (and Mobile Home Park) Customers	1	MFR	X		All Indoor	No
Require Submetering of Landscaping for Existing MFR and Commercial Customers	1	MFR, CII		X	Irrigation	No
Require Submetering of Landscaping for New MFR and Commercial Developments	5	CII		X	Irrigation	Yes, currently
Require Swimming Pool and Hot Tub Covers	1	SFR,MFR		X	Pool/Hot Tub	No
Require Water Efficiency Plan Reviews for New CII Development	5	CII	X	X	All Indoor	Yes, currently
Require Weather Adjusting Smart Irrigation Controllers, Rain Sensors, and/or Soil Moisture Sensors in New Development	5	All		X	Irrigation	Yes, currently
Restrict Landscape Irrigation to Designated Days/Times	1	All		X	Irrigation	No
Water Conserving Landscape and Irrigation Codes, More Stringent than MWELO	5	All		X	Irrigation	Yes, currently
Water Waste Ordinance	5	All		X	All Outdoor	Yes, currently

Abbreviations

AMI = advanced metering infrastructure

CalWEP = California Water Efficiency Partnership

CII = commercial, industrial, institutional

COM = commercial

HEU = High-Efficiency Urinals

IRR = irrigation

MFR = multi-family residential

MWELO = Model Water Efficient Landscape Ordinance

PRV = pressure reducing valve

SFR = single-family residential

SMSWP = Sonoma-Marin Saving Water Partnership

UHET = ultra high efficiency toilet

Notes

(a) Each Water Contractor was asked to rank conservation programs and measures in terms of priority as a locally-administered program, where 5 indicated highest priority and 1 indicated the lowest priority.

APPENDIX E: WATER SHORTAGE CONTINGENCY PLAN



Public Draft

City of Santa Rosa

2025 Water Shortage Contingency Plan







Jointly prepared by

City of Santa Rosa CALIFORNIA

Woodard & Curran

June **2026**

City of Santa Rosa
CALIFORNIA

DRAFT 2025 Water Shortage Contingency Plan

June 2026

Woodard & Curran

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LIST OF ACRONYMS AND ABBREVIATIONS

Acronym	Definition
AB	Assembly Bill
AF	Acre-Feet
AFY	Acre-Feet Per Year
AMI	Advanced Metering Infrastructure
ASR	Aquifer Storage and Recovery
AWE	Alliance for Water Efficiency
AWIA	America's Water Infrastructure Act
AWSDA	Annual Water Supply and Demand Assessment
BMP	Best Management Practice
BPU	Board of Public Utilities
CalWEP	California Water Efficiency Partnership
CII	Commercial, Industrial, and Institutional
City	City of Santa Rosa
CUWCC	California Urban Water Conservation Council
CWC	California Water Code
DDW	Division of Drinking Water
DMM	Demand Management Measure
DWR	Department of Water Resources
EKI	EKI Environment and Water, Inc.
ET	Evapotranspiration
EUP	Excess Use Penalties
FEMA	Federal Emergency Management Agency
FY	Fiscal Year
GPCD	Gallons Per Capita Per Day
GSP	Groundwater Sustainability Plan
LHMP	Local Hazard Mitigation Plan
MJLHMP	Multi-Jurisdictional Local Hazard Mitigation Plan
MOU	Memorandum of Understanding
P.O.W.E.R.	Public Officials for Water and Environmental Reform
PG&E	Pacific Gas and Electric Company
Restructured Agreement	Restructured Agreement for Water Supply dated June 2006
RRA	Risk and Resilience Assessment
SCADA	System Control and Data Acquisition
SGMA	Sustainable Groundwater Management Act
Shortage Methodology	Water Shortage Allocation Methodology
Shortage Plan	Water Shortage Contingency Plan
Sonoma Water	Sonoma County Water Agency
TGAL	1000 gallons

UWMP	Urban Water Management Plan
WSAP	Water Supply Alternatives Plan
WSC	Water Shortage Charge
WSCP	Water Shortage Contingency Plan
WUE	Water Use Efficiency

1. INTRODUCTION

1.1 Overview of the 2025 Water Shortage Contingency Plan

The City of Santa Rosa (City) Water Shortage Contingency Plan (Shortage Plan) is a detailed operational plan that documents how the City will respond to a variety of water shortage scenarios. The Shortage Plan establishes protocols for triggering City-wide water supply shortage levels, implementing corresponding demand reduction strategies to respond to actual supply conditions, and ensures the strategic management of a short- or long-term water shortage event.

A water shortage may occur due to a variety of potential scenarios, such as drought, climate change, regulatory constraints, natural or human caused disasters, and catastrophic events which may occur at any time. The Shortage Plan is the City's operating manual that allows the City Council, staff, and the public to identify and efficiently implement pre-determined steps to manage a water shortage.

Trigger points for determining water shortage conditions on the Russian River system are determined by the Sonoma County Water Agency (Sonoma Water) and water shortage provisions for the Sonoma Water system are governed by the Restructured Agreement for Water Supply dated June 2006 (Restructured Agreement). The contractual provisions of the Restructured Agreement dictate how water supply reductions will be administered by Sonoma Water in the event of a water shortage. For the City and the other parties to the Restructured Agreement (2006), the shortage provisions are defined in Section 3.5 of that agreement and are further defined in the Water Shortage Allocation Methodology (Shortage Methodology) (2022). The Restructured Agreement Section 3.5 provisions, and the Shortage Methodology, are designed to take into account the demand hardening associated with water conservation. The City continues to implement aggressive water conservation programs and has one of the lowest per capita water use rates among all of Sonoma Water's Water Contractors.

The City's first Shortage Plan was adopted by Santa Rosa's City Council on February 11, 1992, in response to emergency legislation, California Assembly Bill 11X. The Shortage Plan has been updated periodically, at a minimum every five years as part of the City's Urban Water Management Plan (UWMP) as required by State law. Legislation has changed the requirements of water shortage contingency planning several times since the initial bill was passed. The current requirements are in Section 10632 of the California Water Code (CWC), the Urban Water Management Planning Act.

The City's 1992 Shortage Plan was revised in 1996 with updated demand and financial data. In 2002, the City completed a comprehensive revision with updates to the demand projections, financial analysis, rate structure for each rationing stage, and rationing methodology for per capita allocations and landscape allocations. In 2005, the City updated the demand and financial data for its Shortage Plan. In 2006, the City added two sections to the document addressing minimum water supply during drought and emergency planning actions. In 2010, the revision included updates to the demand projections, financial analysis, and per capita allocations, and the City added a new rationing stage. In 2015 the City updated the demand projections and financial analysis, added two new rationing stages, and revised the water allocations in those stages. In 2020, the City updated long-term demand projections, updated the financial analysis, added one additional shortage stage, added per capita allocations in rationing stages, and developed a crosswalk to map the existing water shortage stages to the California Department of Water Resources's (DWR) required six shortage levels.

The City's 2025 Shortage Plan updates the long-term demand projections, and financial analysis.

The City prepared this Shortage Plan on a calendar year basis, with the calendar year starting on January 1 and ending on December 31 of each year. The City reports water volumes in units of acre-feet (AF) and acre-feet per year (AFY) in this plan. The City's reporting methods for this 2025 UWMP are summarized in **Table 1-1**.

TABLE 1-1: AGENCY IDENTIFICATION (DWR TABLE 2-3)

Type of Supplier	
	Supplier is a wholesale supplier
☑	Supplier is a retail supplier
Fiscal or Calendar Year	
☑	UWMP Tables are in calendar years
	UWMP Tables are in fiscal years
Units of measure used in UWMP	
Unit	AF

The Shortage Plan includes the following sections:

1. **Introduction** provides a basic overview of the plan.
2. **Water Service Reliability Assessment** summarizes key elements of the water supply reliability analysis conducted for the City's 2025 UWMP and discussed primarily in its Chapters 4, 6, and 7.
3. **Annual Water Supply and Demand Assessment Procedures** outlines the process that the City will use to conduct assessments each year to determine if a shortage exists or is anticipated and provides written decision-making steps for any subsequent actions.
4. **Water Shortage Stages** describes the City's eight water shortage levels and illustrates how these align with the State's six standard water shortage levels.
5. **Shortage Response Actions** describes the shortage response actions the City will implement for each shortage level and estimates the extent these actions will address the gap between supplies and demand.
6. **Communication Protocols** explains the procedures that the City will use to inform customers, the public, and government entities of any current or predicted water shortages and associated response actions.
7. **Compliance and Enforcement** details the means the City will use to ensure compliance and enforcement of triggered shortage response actions and describes appeal and exemption procedures.
8. **Legal Authorities** describes the legal authorities that will empower the City's implementation of shortage response actions during water shortage emergencies.

9. **Financial Consequences of Shortage Conditions** provides a discussion of the potential revenue reductions and expense increases associated with activating shortage response actions and describes the City's mitigation actions.
10. **Monitoring and Reporting Program** summarizes how the City will ensure appropriate data is collected to monitor customer compliance and to respond to any state reporting requirements.
11. **Procedures for Reevaluating and Improving the Shortage Plan** describes steps the City will take to assess the functionality of the Shortage Plan and make appropriate adjustments as may be warranted.
12. **Plan Adoption, Submittal, and Availability** outlines how the City will adopt, submit, implement, and amend (if necessary) the Shortage Plan, and how the City will make it publicly available.

2. WATER SERVICE RELIABILITY ASSESSMENT

This section relies on the water supply planning analysis and reliability findings from the City's 2025 UWMP. The discussion below includes a concise summary of the City's water supply reliability assessment for 2030-2050 and the Drought Risk Assessment for 2026-2030 (from Chapter 7 of the City's 2025 UWMP). Further information about existing and projected water use can be found in Chapter 4 of the City's 2025 UWMP, while more details on existing and planned water supplies by source can be found in Chapter 6 of the City's 2025 UWMP.

2.1 Water Demand Characterization

The long-term water demand analysis is provided in five-year increments through 2050. It includes a realistic prediction of future potable and non-potable (recycled) water use based on the City's past and current use, combined with considerations of anticipated trends in water use, population growth, employment projections, new development, land use planning data, plumbing code information, new regulations, and climate change. The demand projections consider all customer sectors as well as authorized unbilled uses (for activities such as firefighting and line flushing) and water losses from the potable water system (real loss from the distribution system and apparent loss due to things such as billing errors).

The total projections have been adjusted to account for anticipated "passive" water savings which result from new and existing plumbing codes and local ordinances which help reduce water use. In addition to analyzing the passive savings, an analysis of the potential "active" potable water savings was conducted. The assessment of active water savings focused on customer participation in the City's water use efficiency programs. To be conservative, the City did not reduce its long-term demand projections to adjust for anticipated active water savings due to the variation year over year of program participation.

Under contract with the City, EKI Environment and Water, Inc. (EKI) completed a detailed demand analysis which is provided in Appendix D of the City's 2025 UWMP. The City's projected water demand in five-year increments through 2050 is provided in **Table 2-1**.

TABLE 2-1: PROJECTED WATER DEMAND 2030-2050

	2030	2035	2040	2045	2050
Potable	19,613	19,921	20,313	20,765	21,263
Non-potable (recycled)	140	140	140	140	140
Total	**19,753**	**20,061**	**20,453**	**20,905**	**21,403**

Source: 2025 UWMP Table 4-9 (DWR Table 4-2)

The water supply reliability assessment in the 2025 UWMP also includes a Drought Risk Assessment that considers annual water use for the next five years (2026-2030) at "unconstrained" levels. Unconstrained refers to anticipated water use under normal water year conditions when the City is not experiencing a water shortage. To estimate unconstrained demand for 2026-2030, the City interpolated between 2025 actual use and the projected demand for 2030, as shown in **Table 2-2**.

Non-potable (recycled) water use for 2026-2030 was estimated at 140 AFY. The City has no plans to expand the recycled water system in the urban setting for the foreseeable future. Therefore, demands for urban recycled water for 2026-2030 have been projected based on average use for the last ten years (110 AFY) adjusted to 140 AFY to allow for possible impacts of climate change.

TABLE 2-2: ESTIMATED WATER USE 2026-2030 FOR DROUGHT RISK ASSESSMENT

	2026 Estimated	2027 Estimate)	2028 Estimated	2029 Estimated	2030 Projected
Potable[(a)]	17,660	18,148	18,637	19,125	19,613
Non-potable (recycled)[(b)]	140	140	140	140	140
Total	**17,800**	**18,288**	**18,777**	**19,265**	**19,753**

(a) Estimated potable water demand for 2026-2030 was based on interpolating between actual 2025 use and projected 2030 demands from Table 5-4 in Appendix D (EKI report).

(b) Estimated non-potable (recycled water) demand is expected remain at or below 140 AFY.

2.2 Water Supply Characterization

The City has three existing sources of water supply that are summarized at a high level below. Bullets under each source of supply summarize the long-term supply projections for 2030-2050 under varying hydrologic conditions (normal, single dry, and dry five-year periods). More details on existing and planned water supplies by source can be found in Chapter 6 of the City's 2025 UWMP.

Purchased Water: The City receives approximately 95 percent of its potable water supply from Sonoma Water under the provisions of the 2006 Restructured Agreement for Water Supply (Restructured Agreement). Sonoma Water's primary source of supply is the Russian River, with a small amount of water coming from three groundwater wells. The City's annual entitlement is 29,100 AFY.

Section 3.5 of the Restructured Agreement contains supply shortage provisions, which are further defined in the Shortage Methodology. Under the Shortage Methodology, if Sonoma Water's surface water rights and Russian River supply remain limited to 75,000 AFY and the Water Contractors' total demands reach Sonoma Water's 75,000 AFY available supply, then the City's allocation during a shortage would still be

29,100 AFY, the City's full entitlement under the Restructured Agreement. Because the City has implemented an aggressive water conservation program over the past 30 years, it has one of the lowest per capita water uses among all of Sonoma Water's customers, which is why demand hardening is reflected in the Restructured Agreement.

- *Normal Year*: 29,100 AFY; Sonoma Water's model projects being able to provide the City's full entitlement during normal water years through 2050.
- *Single Dry Year*: Sonoma Water's model does not project a supply shortfall of potable water supply during single-dry years. For the purpose of single-dry year supply projections for the City's 2025 UWMP, purchased water volume is assumed equal to total projected demands.
- *Dry Five-Year Period*: Sonoma Water's model projects having less water than normal during dry five-year periods that are hydrologically equivalent to the driest five-year period on record (1987-1991) through 2050, but the City does not anticipate experiencing water shortages during such periods. For the purpose of multiple dry years supply projections for the City's 2025 UWMP, purchased water volume is assumed equal to total projected demands.
- *Drought Risk Assessment (2026*-2030): Sonoma Water assessed its water supply for 2026-2030 assuming dry conditions equivalent to the driest five year period on record (1987-1991). Sonoma Water determined it could provide supplies equal to unconstrained total City demands (less the volume of groundwater and recycled water supplies available) for each of the upcoming five years if a similar drought occurred.

Groundwater: The City produces approximately five percent of its potable water supply from groundwater wells located within the Santa Rosa Plain Subbasin (Subbasin) of the Santa Rosa Valley Groundwater Basin. The Subbasin is managed via a Groundwater Sustainability Plan (GSP) developed in response to the Sustainable Groundwater Management Act (SGMA). With the adoption of the 2023 Water Supply Alternatives Plan (WSAP), the City has a renewed focus on new production capacity. This could include developing new groundwater wells, converting emergency wells to production and exploration of aquifer storage and recovery (ASR) wells. With the WSAP, the City anticipates developing new production groundwater wells, up to approximately 4,100 AFY, including existing supply of 2,300 AFY.

- *Normal Year*: 4,100 AFY
- *Single Dry Year*: 4,100 AFY; the City projects that groundwater supply would not be reduced during a single-dry year due to the short duration of a single-dry year and the historic artesian conditions of the City's Farmers Lane wells (currently the sole production wells for the City).
- *Dry Five-Year Period*: 4,100 AFY; the City projects that groundwater supply would not be reduced during dry five-year periods due to the quantity of groundwater storage available and the City's observation that its wells have historically always quickly returned to artesian conditions each year (even during drought conditions).
- *Drought Risk Assessment (2026*-2030): 2,300 AFY; the City projects that groundwater supply would not be reduced if the next five years were equivalent to the driest five-year period on record. 2,300 AFY is the current groundwater supply before new groundwater wells are installed (as described above).

Recycled Water: The City offsets approximately 0.7 percent of total demand for potable water in the urban system with recycled water produced from the Santa Rosa Regional Water Reuse System (Regional System).

The City is not planning to expand the urban recycled water system for the duration of the planning period of the 2025 UWMP. Urban recycled water customers are considered "non-interruptible" and have priority for recycled water deliveries. Therefore, the City projects being able to provide up to 140 AFY of non-potable water (recycled water) to urban recycled water customers through 2045.

- *Normal Year*: The Regional System provides up to approximately 140 AFY for urban recycled water customers.
- *Single Dry Year*: 140 AFY; the City projects non-potable (recycled) water supply would not be reduced during single-dry years.
- *Dry Five-Year Period*: 140 AFY; the City projects non-potable (recycled) water supply would not be reduced during a dry five-year period.
- *Drought Risk Assessment (2026*-2030): 140 AFY; the City projects non-potable (recycled) water supply would not be reduced if the next five years were equivalent to the driest five-year period on record.

2.3 Water Service Reliability Findings

This section summarizes the findings of the reliability analysis of the City's water service under various scenarios. The analysis considers projected water demands discussed in **Section 2.1** and planned water supplies in **Section 2.2** to determine if, and when, water shortages might be anticipated. Water service reliability was evaluated through 2050 in five-year increments for normal water years, single dry water years, and dry periods lasting five consecutive years. Separately, a Drought Risk Assessment was evaluated for 2026-2030 assuming drought conditions equivalent to the driest five-year period on record. Full details on the water service reliability analyses can be found in Chapter 7 of the City's 2025 UWMP.

- *Normal Water Years:* The City projects having adequate water supplies in normal years to meet demands through 2050 (see **Table 2-3**).
- *Single Dry Water Years:* The City does not project a shortfall in contract water supply from Sonoma Water in any single dry year that is hydrologically equivalent to the driest water year on record (1977). The City also does not anticipate a shortfall in groundwater supply or recycled water supply (see **Table 2-4**).
- *Dry Five-Year Periods:* The City projects having adequate water supplies during dry five-year periods to meet normal demands through 2050 (see **Table 2-5**).
- *Drought Risk Assessment:* The City projects having adequate water supplies to meet unconstrained demands for 2026-2030, assuming the hydrology will be equivalent to the driest five-year period on record (1987-1991) (see **Table 2-6**).

TABLE 2-3. NORMAL YEAR SUPPLY AND DEMAND COMPARISON (DWR TABLE 7-2)

	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals	31,540	32,340	33,340	33,340	33,340
Use totals	19,753	20,061	20,453	20,905	21,403
Surplus/(shortfall)	11,787	12,279	12,887	12,435	11,937

TABLE 2-4. SINGLE DRY YEAR SUPPLY AND DEMAND COMPARISON (DWR TABLE 7-3)

	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
Supply totals	22,053	23,161	24,553	25,005	25,503
Use totals	19,753	20,061	20,453	20,905	21,403
Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100

TABLE 2-5. MULTIPLE DRY YEARS SUPPLY AND DEMAND COMPARISON (DWR TABLE 7-4)

		2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	2050 (AF)
First year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
Second year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
Third year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
Fourth year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100
Fifth year	Supply totals	22,053	23,161	24,553	25,005	25,503
	Use totals	19,753	20,061	20,453	20,905	21,403
	Surplus/(shortfall)	2,300	3,100	4,100	4,100	4,100

TABLE 2-6. FIVE-YEAR DROUGHT RISK ASSESSMENT TABLES TO ADDRESS WATER CODE SECTION 10635(B) (DWR TABLE 7-5)

2026	Total
Total Water Use (AF)	17,800
Total Supplies (AF)	17,801
Surplus/Shortfall w/o WSCP Action	1
2027	**Total**
Total Water Use (AF)	18,288
Total Supplies (AF)	18,289
Surplus/Shortfall w/o WSCP Action	1
2028	**Total**
Total Water Use (AF)	18,777
Total Supplies (AF)	18,777
Surplus/Shortfall w/o WSCP Action	0
2029	**Total**
Total Water Use (AF)	19,265
Total Supplies (AF)	19,266
Surplus/Shortfall w/o WSCP Action	1
2030	**Total**
Total Water Use (AF)	19,753
Total Supplies (AF)	19,754
Surplus/Shortfall w/o WSCP Action	1

All water consumed by the City comes from local supply sources. No water is imported from other regions, nor does the City anticipate importing water from other regions throughout the UWMP planning period.

It is important to note that Sonoma Water can store 245,000 AF of water in Lake Sonoma and can divert up to 75,000 AFY for water supply purposes under current water rights permits. This means that Lake Sonoma can store approximately three years of normal water supply, possibly more. In 2023, USACE approved a request from Sonoma Water for a minor deviation to the Lake Sonoma/Warm Springs Dam Water Control Manual. The deviation authorizes USACE to store up to an additional 9,500 ac-ft of water in Lake Sonoma at its discretion until February 15, increasing to 19,000 ac-ft on March 1. The minor deviation expires on September 30, 2026. While purchased water supply volumes in **Table 2-4** are assumed to exactly meet demands in single dry years when shortages might occur, it is anticipated that additional water would remain in storage in Lake Sonoma to meet future demands. In addition, the City's groundwater wells would only be pumped as needed to meet water use, even though the groundwater supply could produce more water.

In addition, the City's existing water management tools have increased the reliability of water supplies. By funding, staffing, and implementing water use efficiency programs for three decades, the City has helped

ensure water is used wisely by customers during all water supply conditions. Details about these efforts are discussed in more detail in Chapter 9 of the City's 2025 UWMP. These programs have helped the City decrease gallons per capita per day (GPCD) 50 percent over the past 35 years, decreasing from 177 GPCD in 1990 to 88 GPCD in 2025. Total water use went down 24 percent, decreasing from 22,494 AF in 1990 to 17,172 AF in 2025, despite an increase in population of 54 percent. Going forward, the City will continue to provide ongoing water use efficiency programs. The City will also respond to water shortage conditions that may require immediate action during mild to severe drought periods or catastrophic supply interruptions by implementing this Shortage Plan.

2.4 Emergency Response Planning

In addition to responding to drought conditions, the City's Shortage Plan can be used to respond to sudden conditions that interrupt water supplies to the City. Water supplies may be interrupted in the future due to a catastrophic supply interruption, area-wide power failures or shutoffs, or natural disasters such as an earthquake.

In accordance with America's Water Infrastructure Act (AWIA), the City completed a Risk and Resilience Assessment (RRA) of its water system in 2020 and updated it in 2025. The RRA systematically evaluated the City's assets, threats, and risks, and countermeasures that might be implemented to minimize overall risk to the water system. The RRA screened assets for vulnerability, including critical water system components and facilities such as storage tanks, wells, water mains, chemical tanks, water valves, pump stations, portable pumps, emergency generators, fire hydrants, and System Control and Data Acquisition (SCADA) systems. To ensure the security of the City's water system, the RRA is being retained by the City as a confidential document.

Sonoma Water's facilities are also subject to catastrophic supply interruption, area-wide power failures or shutoffs, or a natural disaster such as an earthquake. Sonoma Water facilities serving the City have backup provisions for responding to such emergencies. Additional information about Sonoma Water's emergency response and hazard mitigation plans can found in its 2025 UWMP.

In the event of an emergency such as those described below, the Water Department would respond according to the then-current City of Santa Rosa Water Department Water System Emergency Response Plan.

2.4.1 Catastrophic Supply Interruption

If Sonoma Water's Russian River supply becomes contaminated (e.g., due to a chemical spill or other environmental incident), it may be possible that no water would be available from Sonoma Water for a period of time. In such a case, the City would rely on water from Sonoma Water's distribution system storage facilities and/or the City's distribution system storage facilities, the Farmers Lane wells, and/or emergency wells. If such an event were to occur, the City would also implement the corresponding stage of this Shortage Plan and immediately notify customers of the need to reduce water use until Sonoma Water's water supply is restored.

2.4.2 Area-Wide Power Failure or Shutoff

In the event of an area-wide electrical power failure or localized public safety power shutoff within the City's water service area, the City would activate stationary and/or mobile standby generators to ensure facilities

have adequate power to operate. In addition, the City has numerous pumper connectors and pressure regulating valves throughout the water system to move water from different pressure zones during an emergency. Since the devastating Tubbs Wildfire in October 2017, the City has made substantial investment in backup power at critical facilities, successfully responded to dozens of public safety power shutoffs by PG&E of varying geographic scale and duration, and the City has also responded to additional wildfire events which have threatened or impacted the water system. Despite the challenges these circumstances have posed, the City has maintained water deliveries and the safe operation of its water facilities throughout each event.

2.4.3 Seismic Risk and Mitigation

CWC Section 10632.5(a) requires that Water Shortage Contingency Plans include a seismic risk assessment and mitigation plan to assess water system vulnerabilities and mitigate those vulnerabilities. A Local Hazard Mitigation Plan (LHMP) may be incorporated into Water Shortage Contingency Plans to address this requirement if it addresses seismic risk.

The City's 2016 Local Hazard Mitigation Plan (2016 LHMP) was adopted by the City Council on January 10, 2017 (Resolution No. RES-2017-004). The 2016 LHMP was submitted to the Federal Emergency Management Agency (FEMA), which found it in conformance with Title 44 Code of Federal Regulations Part 201.6 Local Mitigation Plans. The 2016 LHMP was updated in 2021. The newest draft plan, now called the Multi-Jurisdictional Local Hazard Mitigation Plan (MJLHMP 2026) is expected to go to Council in 2026.[1]

As discussed in the 2021 LHMP and draft 2026 MJLHMP, seismic activity is a known and historic threat to the City. The Rodgers Creek fault is an active fault running through the City and its Urban Growth Boundary. In addition, Santa Rosa's location in the San Francisco Bay Area makes the City vulnerable to regional seismic impacts.

Historically, very few earthquakes have caused damage in the City. The 1906 earthquake that notoriously impacted San Francisco also caused strong shaking impacts in Santa Rosa, stemming from a nearly 300-mile fault rupture along the San Andreas Fault. The shaking collapsed Santa Rosa City Hall and many other buildings across the City. In 1969, two earthquakes along the Healdsburg Fault (with epicenters two miles north of the City) caused some damage in Santa Rosa, including bursting City water pipelines along two creeks. In 1989, the Loma Prieto earthquake (one of the most significant earthquakes in recent history in the San Francisco Bay Area) caused ground shaking in Santa Rosa but did not damage the City's water system.

The City's proximity to active fault zones means the City will continue to face earthquake hazards in the future. The Rodgers Creek and San Andreas faults are among the most active Bay Area faults and have experienced movement within the last 150 years. According to the 2016 LHMP and MJLHMP 2026, some utility facilities (water, sewer, wastewater treatment, and recycled water systems) are at risk of damage from moderate to very high ground shaking events.

As mentioned earlier, the City completed a RRA of its water system in 2020. The RRA systematically evaluated the City's assets, threats, and risks, and evaluated countermeasures that might be implemented to minimize overall risk to the system. The RRA screened assets for vulnerability, including critical water system components and facilities such as storage tanks, wells, water mains, chemical tanks, water valves,

[1] www.srcity.org/540/Local-Hazard-Mitigation-Plan

pump stations, portable pumps, emergency generators, fire hydrants, and SCADA systems. The RRA determined that some water assets are at risk of damage due to earthquakes with very strong to severe shaking. The RRA also determined that critical water assets are not located in areas considered highly susceptible to liquefaction.

In response to the 2016 LHMP, 2026 MJLHMP and 2020 RRA, the City has been integrating the findings into its master planning processes and implementing seismic retrofit projects through its Capital Improvement Program to enhance the resiliency of the water system. Additionally, the City's facilities have been constructed in accordance with the applicable building codes to minimize potential damage during an earthquake. While some facilities may be damaged as the result of a strong earthquake, the City has planned for this potential by constructing redundancy into its water system. The City has multiple storage facilities, looped distribution pipelines, and a hose reel trailer with over 2,500 linear feet of potable hose in various sizes with fittings to allow potentially damaged portions of the City's system to be quickly isolated and repaired as well as being able to construct manifolds for temporary emergency water stations. The City also participates in local, regional, and statewide emergency response assistance networks and mutual aid agreements.

3. PROCEDURES FOR ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT

Beginning July 1, 2022, CWC Section 10632.1 requires water suppliers to complete an Annual Water Supply and Demand Assessment (AWSDA) and submit an Annual Water Shortage Assessment Report to DWR. The first annual assessment report was due July 1, 2022.

This Shortage Plan provides the procedures for the City to conduct its AWSDA and prepare an Annual Water Shortage Assessment report to discuss the findings and recommended response actions. The procedures provided below are intended to assist the City in planning for, and responding to, potential foreseeable shortages in water supplies. These procedures provide the steps the City needs to take to complete the AWSDA and Annual Water Shortage Assessment Report, the results of which may lead to declaring a water shortage emergency and water shortage stage and implementation of the water shortage response actions detailed in this Shortage Plan.

3.1 Decision Making Process

The decision-making process described below will be used by the City annually to determine its water supply reliability in a consistent manner. The City may adjust this process as needed for improved decision-making during implementation.

Each year beginning in 2022, a team of City Water Department staff is responsible for preparing the AWSDA and the Annual Water Shortage Assessment Report and submitting the report to DWR by July 1 of each year.

The City Team will gather key data inputs described in **Section 3.2** and conduct the AWSDA in accordance with **Section 3.3**. The Team will complete the AWSDA and develop the Annual Water Shortage Assessment Report based on an analysis of data and information. The report will include findings and make recommendations for actions, as needed. The Team will present the AWSDA and Annual Water Shortage Assessment Report to the Deputy Director Water Resources, or designee, for review. The final approved documents are submitted to DWR by July 1 each year.

If the AWSDA finds that available water supply will be sufficient to meet expected demands for the current year and one subsequent dry year, no further action will be required.

Upon a determination by the AWSDA that supply will not meet projected demand, the Team will prepare a resolution or ordinance, as needed, for required City Council consideration and authorization at a public meeting, with optional review and recommendation prior to that by the Board of Public Utilities.

Additionally, the Team and the Director of Water, or designee, will coordinate internally across divisions and departments and externally with Sonoma Water and other local water suppliers for the possible proclamation of a local water emergency. In addition, state officials will be informed.

If a shortfall is projected, the AWSDA findings will be presented optionally to the Board of Public Utilities for recommendation and to City Council at a public meeting, along with the recommendations from the Annual Water Shortage Assessment Report. Recommended actions may include declaration of a water

shortage emergency, declaration of a water shortage stage, authorization of water shortage response actions, and/or other actions as needed.

After City Council acts, the City will implement the water shortage responses as authorized by City Council and will report as required to State and local officials and stakeholders.

The City will follow **Table 3-1** for its decision making.

TABLE 3-1: PROPOSED SCHEDULE OF DECISION-MAKING ACTIVITIES (SUBJECT TO CHANGE)

Start Date	End Date	Activities	Responsible Party
May 15	May 30	Based on determinations of AWSDA, prepare the Annual Water Shortage Assessment Report with recommendations on water shortage condition determination and response actions. Submit to Deputy Director, or designee, for review.	Team
Jun 1	Jun 15	Review AWSDA and Annual Water Shortage Assessment Report and provide comments as needed.	Deputy Director Water Resources
Jun 1	Ongoing as needed	Coordinate interdepartmentally, with the region's water service provider, and with County for the possible proclamation of a local emergency.	Team
Jun 15	June 30	Finalize and approve AWSDA and Annual Water Shortage Assessment Report.	Team
Jul 1	Jul 1	Submit approved Annual Water Shortage Assessment Report to the State.	Team
As needed	As needed	If a shortage is projected, prepare City Council resolution or ordinance (as needed) approving determinations and actions. • Schedule public meeting and meet requirements for public notification. • Present AWSDA findings and Annual Water Shortage Report recommendations (optional: Board of Public Utilities for recommendation) at City Council public meeting, along with resolution or ordinance (as needed) approving determinations and response actions. • Council to conduct public meeting, consider the findings and recommendations, and act on resolution (and/or ordinance as needed) to declare a water emergency and water shortage stage, and authorize water shortage response actions for implementation. • Implement the Shortage Plan response actions as authorized by City Council. • Report as required to State officials.	Team, Director of Water, Board of Public Utilities, City Council, Outreach Team, and Water Use Efficiency Section

3.2 Key Data Inputs

The AWSDA requires the evaluation of supply and demands for the current year and one dry year that is assumed to follow the current year. The following key data inputs will be used to evaluate the City's water supply reliability.

Planned water supplies will be used as input to the AWSDA for the current year and the following one dry year. In planning for water supplies, the following factors are considered:

1. Hydrological conditions
2. Regulatory conditions
3. Contractual constraints
4. Surface water and groundwater quality conditions
5. Infrastructure capacity constraints or changes
6. Capital improvement projects implementation
7. Supply availability and/or production issues

Planned water supply sources and quantities will be described and will be reasonably consistent with the supply projections in the City's adopted UWMP Chapter 6 (Water Supply Characterization) and based on updated modeling by Sonoma Water each year for contract water. Should the supply sources and projections deviate significantly from projections, an explanation for the difference will be provided.

Planned unconstrained water demands will be used as inputs to the AWSDA for the current year and the following one dry year. Unconstrained water demands are customer demands where no water conservation measures are in effect. In planning for water demands, the following factors are considered:

1. Weather conditions
2. Water year type
3. Population changes
4. Anticipated new demands
5. Pending policy changes that may impact demands
6. Infrastructure operations

Planned water demands types and quantities will be described and be reasonably consistent with the demand projections in the City's adopted UWMP Chapter 4 (Water Use Characterization). Should the demand projections deviate significantly from projections, an explanation for the difference will be provided.

3.3 Assessment Methodology

In preparing the AWSDA, the City will use the following methodology and evaluation criteria to assess the agency's water supply reliability for the current year and following one dry year.

The City will use a spreadsheet to plan for current year and future year demands. Planned supply for each water source and estimated demand inputs described in **Section 3.2** will be utilized for the forecast.

Projected supplies will be compared to demands to determine the reliability of the City's water supply in the current year and one subsequent dry year. The City's water supply will be determined to be reliable if water supply is sufficient to meet the planned water demands for the current and subsequent year. If unconstrained demands exceed water supply in the current year and/or one subsequent dry year, the water supply will be determined to have an existing or anticipated water shortage condition.

3.3.1 Water Supply Forecast for the Annual Assessment

Planned water supply sources and quantities will be described and will be reasonably consistent with the supply projections in the City's adopted UWMP Chapter 6 (Water Supply Characterization) for each water supply source and based on updated modeling by Sonoma Water each year for contract water. Should the supply sources and projections deviate significantly from projections, an explanation for the difference will be provided. The City may adjust its water supply projections as needed to account for hydrological conditions, regulatory conditions, contractual constraints, water quality conditions, infrastructure capacity constraints or changes, capital improvement project implementation, or other issues.

3.3.2 Unconstrained Customer Demand for the Annual Assessment

Estimated unconstrained water demands will be reasonably consistent with the projections in the City's adopted UWMP Chapter 4 (Water Demand Characterization). Should the demand estimates deviate significantly from projections, an explanation for the difference will be provided. The City may adjust its customer demand forecast as needed to account for factors such as weather, population changes, anticipated new demands, prior year conditions, infrastructure operations, and other factors pertinent to land use and customer patterns.

3.3.3 Planned Water Use Current Year Considering Dry Subsequent Year for Annual Assessment

The City will evaluate how anticipated water supplies for the coming year will be used, while assuming the subsequent year will be a dry year. This assessment will be informed by the factors that affect the availability and management of all water supplies under varying hydrologic and regulatory conditions, unique water rights or contract provisions, and infrastructure risks.

3.3.4 Infrastructure Considerations for Annual Assessment

The City will evaluate how infrastructure capabilities and constraints may affect the City's ability to deliver supplies to meet expected water use needs in the coming year. This will include consideration of anticipated capital projects that may influence capabilities, such as repairs that may constrain capabilities or new projects that may add capacity.

3.3.5 Other Factors for Annual Assessment

The City will describe any locally appropriate factors that can influence or disrupt supplies, along with other unique local considerations that are considered as part of the AWSDA.

3.4 Adoption of the Annual Assessment Each Year

Each year beginning in 2022, the City has and will continue to conduct the AWSDA and develop the Annual Water Shortage Assessment Report, as outlined above, to determine whether a water shortage exists or is anticipated in the current and/or one subsequent dry year.

The AWSDA and Annual Water Shortage Assessment Report will be presented to the Director of Water, or designee, for review and approval. The approved report will then be submitted to DWR by July 1 each year.

If the AWSDA finds that available water supply will be adequate to meet expected demands for the current year and one subsequent dry year, no further action will be required.

If the AWSDA finds that available supply will not meet expected demands, the City may present the findings and recommendations to the Board of Public Utilities for recommendation. The City will present these findings to the City Council at a public meeting, along with a resolution or ordinance (as needed) approving the findings and response actions. After City Council acts, the City will implement the authorized water shortage response actions.

4. WATER SHORTAGE STAGES

Recent updates to CWC section 10632 (a)(3) indicate that Shortage Plans must include standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40 and 50 percent shortages and greater than 50 percent shortage. The CWC allows water suppliers to use their own water shortage levels provided they include a narrative or graphic describing the relationship of their water shortage levels to the standard water shortage levels prescribed by the CWC.

To allow for a more refined response to water shortages, the City's Shortage Plan includes eight shortage levels rather than the State's standard six levels. **Section 5** describes the shortage response actions to be implemented during each water shortage level to address the water supply gap.

In normal water supply circumstances, the City meets its anticipated customer water demand with 100 percent available supply. If the City determines that its normally available supply is reduced by up to 10 percent, it will implement Stage 1 of this Shortage Plan, which includes locally appropriate response actions to address the water supply gap. The same shortage considerations apply to the remaining water shortage levels, including Stage 2 (11-15 percent shortage), Stage 3 (16-20 percent shortage), Stage 4 (21-25 percent shortage), Stage 5 (26-30 percent shortage), Stage 6 (31-40 percent shortage), Stage 7 (41-50 percent shortage) and Stage 8 (over 50 percent shortage).

Table 4-1 summarizes the City's eight water shortage levels.

TABLE 4-1: CITY'S WATER SHORTAGE CONTINGENCY PLAN LEVELS

Shortage Level	Percent Shortage Range Numerical value as a percent	Water Shortage Condition (Narrative description)
1	Up to 10%	Voluntary 10% reduction in use community-wide
2	Up to 15%	Mandatory 15% reduction in use community-wide
3	Up to 20%	Mandatory 20% reduction in use community-wide
4	Up to 25%	Mandatory 25% reduction in use community-wide
5	Up to 30%	Mandatory 30% reduction in use community-wide, with water allocations assigned to each customer
6	Up to 40%	Mandatory 40% reduction in use community-wide, with water allocations assigned to each customer
7	Up to 50%	Mandatory 50% reduction in use community-wide, with water allocations assigned to each customer
8	Over 50%	Mandatory more than 50% reduction in use community-wide, with water allocations assigned to each customer

The State requires water providers to indicate how their water shortage levels compare to the State's standard six stages for shortages. The City wishes to have more flexibility in less severe shortages. **Table 4-2** illustrates how the City's eight water shortage stages align with the State's six standard stages.

TABLE 4-2: CITY'S SHORTAGE LEVELS COMPARISON TO DWR STANDARDS (DWR TABLE 8-1)

State Standard Shortage Levels	Percent Shortage Range	Santa Rosa's Shortage Levels	Percent Shortage Range (City Shortage Stage)
1	Up to 10%	1[(a)]	Up to 10%
2	Up to 20%	2 & 3	Up to 15% (2) Up to 20% (3)
3	Up to 30%	4 & 5	Up to 25% (4) Up to 30% (5)
4	Up to 40%	6	Up to 40%
5	Up to 50%	7	Up to 50%
6	>50%	8	>50%
NOTES: (a) Stage 1 is voluntary.			

5. SHORTAGE RESPONSE ACTIONS

This Shortage Plan provides for a broad range of shortage response actions for reducing water use and managing demands as needed during water shortages (see **Section 5.2**). It also includes one supply augmentation shortage response action (see **Section 5.1**). Specific actions differ depending on the severity of the shortage level and the anticipated water use reduction impact of each action.

5.1 Supply Augmentation

The City may find that, under certain conditions, its contract water supply is reduced catastrophically and suddenly. In this situation, the City may activate its production wells (if not already in use). Under normal water conditions, the City's production wells provide water supply during dry, peak demand irrigation months (typically April through October). If these production wells were to be activated during non-irrigation months, this could be an augmentation of water supply of up to 2,300 AFY as shown in **Table 5-1** and **Table 5-2**. The City may also activate its standby wells, if available, to augment emergency water supply.

TABLE 5-1: CITY WELL PUMP CAPACITY

Well Name/Number	Well Status	Capacity (AFY)
A Place to Play (W7)	In construction. Will be used for emergency potable purposes.	To Be Determined (TBD)
Leete (W1)	Offline for rehabilitation; used for emergency potable purposes only.	TBD
Carley (W21)	Offline for rehabilitation; used for emergency potable purposes and some landscape irrigation. May be re-permitted as a production well.	TBD
Peter Springs (W22)	Offline for rehabilitation; used for emergency potable purposes, landscape irrigation and filling of a nearby lake.	TBD
Farmers Lane (W4-1)	Active Status[(a)]	2,300 (combined with W4-2)
Farmers Lane (W4-2)	Active Status[(a)]	2,300 (combined with W4-1)
NOTES: [(a)] Change in status approved by California Department of Public Health (now Division of Drinking Water (DDW)) on July 20, 2005.		

TABLE 5-2: SUPPLY AUGMENTATION SHORTAGE RESPONSE ACTIONS (DWR TABLE 8-2 RETAIL)

No	Is the Supplier completing this table using the standard six levels?			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage	Shortage Gap Reduction Value (May be a range) (AF)	
Any	Other Actions (describe)	Volume	2,300	In non-irrigation months, production wells can be activated as emergency augmented water supply in the case of catastrophic/sudden water supply reduction.

5.2 Demand Reduction Actions

Demand reduction strategies will be employed at all stages of a water shortage emergency. These methods include:

- Public information campaign
- Programs to help customers reduce water use
- Water use restrictions and prohibitions
- Water Waste Patrols
- Locally appropriate operational changes
- Water shortage rates
- Water allocations
- Excess use penalties

The shortage response actions for each water shortage level are described below, with a corresponding estimate of the extent the action will address the gap between supplies and demands in **Section 5.3**.

5.2.1 Public Information Campaign

During water shortages of any level, the City will implement an information campaign to inform customers, officials, water suppliers, and interested parties about the water shortage, the water use reduction target, actions customers can take to help achieve the water use reduction target, assistance the City can provide its customers, and water use prohibitions and restrictions. The City may also choose to develop an outreach campaign specifically for any number of CII accounts that meets either of the following designation: 1) water use was reported in the top 20% within the Annual Water Use Report submitted to the State Board and/or 2) has nonfunctional turf present that is subject to AB 1572. A comprehensive communication plan is detailed in **Section 6** of this Shortage Plan.

During each drought experienced by the City to date, public outreach and education efforts have proven to be extremely effective in achieving water reduction targets to ensure demand does not exceed supply. The City's public information campaigns during past water shortages have been designed to help customers understand and implement measures to reduce water use by eliminating water waste, reducing nonessential uses, conserving water, and participating in the City's Water Use Efficiency Programs. During shortages, the community has quickly reduced water use in response to the public information campaign.

5.2.2 Programs to Help Customers Reduce Water Use

Water conservation and demand management are an integral part of the City's water supply strategy. The City has been implementing water conservation programs since the 1976-1977 drought. In the early 1990s, the City expanded these efforts by hiring a full-time Water Conservation Coordinator. By 1998, the City had established its first rebate and incentive programs and had hired three full time staff dedicated to water conservation program implementation. Additionally, in 1998 the City became a signatory to the California Urban Water Conservation Council (CUWCC) *Memorandum of Understanding Regarding Urban Water Conservation* (MOU) dated September 1997. The City continued to expand its demand management and conservation programs to address the requirements of the Best Management Practices (BMPs) identified by the CUWCC. As a result of these efforts, the City was recognized by the Public Officials for Water and Environmental Reform (P.O.W.E.R) 2007 Water Conservation Scorecard as one of only two water retailers in the State of California to successfully complete all 14 of the CUWCC's BMPs outlined in the 1998 CUWCC MOU, without an exemption. Following the CUWCC's restructuring in 2018 to become the California Water Efficiency Partnership (CalWEP), a state chapter of the national organization the Alliance for Water Efficiency (AWE), BMPs are no longer required. However, the City still implements a suite of Demand Management Measures (DMMs) and conservation programs and intends to expand these per new state conservation regulations which became effective in January 2025.

Since the early 1990s, the City has spent approximately $30 million on its water conservation programs, including replacement of approximately 58,000 toilets with ultra low flow and high efficiency toilets and conversion of over 4.3 million square feet of high water use turf grass to low water use landscaping. The City's cumulative water conservation implementation and passive savings has resulted in a 50 percent reduction in per capita use (compared to 1990).

Currently, the City implements the following DMMs and BMPs under all water supply conditions to help the City and its customers use water wisely in all sectors (residential, commercial, industrial, institutional, and large landscape irrigation):

- Full-time water conservation program coordination and staffing
- Distribution system water loss auditing and water loss controls
- Enforcement of a Water Waste Ordinance
- Implementation of the Water Efficient Landscape Ordinance
- Metering (Advanced Metering Infrastructure [AMI]) and monthly billing of all water customers
- Conservation pricing and rate structure
- Public education and outreach
- WaterSmart Customer Portal
- Free fixtures (such as high efficiency faucet aerators and showerheads)

- Technical assistance and site evaluations
- Incentives and rebates

During water shortages of any level, the City can decide to increase the monetary amount of various customer incentives and rebates to drive additional program participation. Additional details regarding the City's conservation efforts can be found in the City's 2025 UWMP in Chapter 9 Demand Management Measures.

5.2.3 Water Use Prohibitions and Restrictions

In addition to any state-mandated prohibitions and the City's Water Waste Ordinance, the City has established prohibitions for each water shortage stage. Compliance and enforcement procedures are discussed in **Section 6** of this Shortage Plan.

5.2.3.1 Water Waste Ordinance

The City adopted a Water Waste Ordinance in 1999, which is in effect at all times during normal and shortage conditions. The Ordinance includes provisions for the following:

- Prohibits waste of water due to breaks or leaks in the water delivery system or water use in outdoor areas resulting in runoff.
- Requires all new water services using evaporative cooling systems, decorative water fountains, conveyer car washes, and industrial clothes washers to be equipped with water recycling or reuse systems.
- Provides the City the authority to discontinue service and/or place a fee on the water bill if the water waste is not corrected.

The City typically receives reports of potential water waste violations from a range of sources, such as the general public, the City's Water Waste Patrols (discussed in **Section 5.2.4**), other City staff, automated Advanced Metering Infrastructure (AMI) alerts of continuous use, automated billing system alerts of unusually high use during a billing cycle, and/or automated or manual review of customer use data and water allocations. **Section 7** provides a detailed discussion of compliance and enforcement procedures for water waste and other violations of the Shortage Plan provisions which occur during water shortages.

5.2.3.2 Restrictions on Water Features

In compliance with the CWC Section 10632(b), the City provides separate restrictions on water use for swimming pools and spas from those on other water features, such as decorative water features and ornamental fountains. These water use restrictions are called out separately in this Shortage Plan.

5.2.3.3 Prohibitions and Restrictions by Shortage Stage

See **Appendix A** for a full list of each prohibition and restriction by shortage stage.

5.2.4 Water Waste Patrols

During a water shortage of any level, the City may implement proactive water waste patrols to identify and inform customers about violations of the Water Waste Ordinance (e.g., water running off a site due to over-irrigation or broken irrigation equipment) and/or violations of other irrigation restrictions (prohibition against all irrigation in Stage 8, for example). Water Waste Patrol efforts may include physical patrols in vehicles as well as "patrols" using AMI data to monitor for compliance. The frequency and scope of Water Waste Patrols will increase or decrease as needed, depending on the time of year, weather conditions, and shortage level restrictions in place. When a violation has been observed by the Water Waste Patrol, the customer will be notified and offered technical assistance, recommendations, and information on incentive and rebate programs to help the customer correct the violation. **Section 7** provides a detailed discussion of compliance and enforcement procedures.

5.2.5 Locally Appropriate Operational Changes

During a water shortage of any level, the City may elect to implement operational measures to support implementation of the Shortage Plan. This may include hiring temporary workers, reassigning staff, and/or increasing overtime to provide staffing for a range of efforts, such as conducting Water Waste Patrols, implementing the communication protocols, responding to customer service requests, scheduling and conducting site assessments and consultations, processing incentive and rebate applications, and conducting compliance and enforcement efforts. The City may also elect to limit water main flushing and restrict potable water use for fire department drills. Operational changes will be considered at each level of water shortage to determine whether and when to implement such measures.

5.2.6 Water Shortage Charge

During water shortage Stages 2 through 8, the Water Shortage Charge (WSC) can be implemented to encourage customers to reduce water use commensurate with the water shortage target and to help the City recover a portion of the cost of the revenue from the shortfall from the entire community. If a customer reduces water use consistent with the water shortage target, their water bill will not significantly change (relative to standard rates with normal usage) even after the water usage rates are increased by the WSC. See **Section 9** for a discussion of the financial analysis used to set the WSC for each Stage.

Under normal water supply conditions and in shortage Stage 1, the current water rate structure remains in place. Beginning in Stage 2, a WSC of 5 percent can be added to the customer usage rates on every unit of water sold for all customer services. The WSC will increase to 7.5 percent in Stage 3, 10 percent in Stage 4, 15 percent in Stage 5, 25 percent in Stage 6, 35 percent in Stage 7, and finally 45 percent in Stage 8. In addition, beginning in Stage 5 and continuing through Stage 8, the tiered water usage rate structure for Single Family, Duplex, and Dedicated Irrigation services is replaced by the then-current uniform water usage rate applicable to Multi-Family and Commercial, Industrial, and Institutional (CII) services.

Table 5-3 summarizes the incremental changes in water rates as a function of water shortage stages. More detail is provided in **Section 9**.

TABLE 5-3: INCREMENTAL CHANGES IN WATER RATES

Stage	Water Shortage Condition	Water Shortage Charge
1	Up to 10 percent	No Water Shortage Charge
2	Up to 15 percent	5 percent of customer use rate
3	Up to 20 percent	7.5 percent of customer use rate
4	Up to 25 percent	10 percent of customer use rate
5	Up to 30 percent	15 percent of customer use rate
6	Up to 40 percent	25 percent of customer use rate
7	Up to 50 percent	35 percent of customer use rate
8	Over 50 percent	45 percent of customer use rate

5.2.7 Water Allocations

Under normal conditions and under shortage conditions in Stages 1 through 4, water services are not subject to water rationing (water allocations). In shortage Stages 5 through 8, water allocations will be assigned to each water service as follows:

Stage 5: 30 percent overall water use reduction, with mandatory allocations assigned to each water service as follows:

- Single Family services receive 40 GPCD (gallons per permanent resident at the house) plus a landscape allocation of 2,000 gallons per billing cycle for use from May through October (the irrigation season).
- Multi-Family services receive 40 GPCD plus a landscape allocation of 2,000 gallons (if irrigation usage is not on a separate dedicated service) per billing cycle for use from May through October.
- Commercial/Industrial/Institutional services receive 85 percent of the previous 12 months' usage or of the most recent 12-month period with no water shortage restrictions in place.
- Dedicated Irrigation Meter services, including recycled water accounts, receive a water budget based on 40 percent of historical net evapotranspiration[1] based demand for the square footage of the irrigated area.
- Health care and public safety services receive 95 percent of the most recent 12 month period with no water shortage restrictions in place (prior to declaration of Stage 1).

Stage 6: 40 percent overall water use reduction, with mandatory allocations assigned to each water service as follows:

- Single Family services receive 36 GPCD plus a landscape allocation of 1,000 gallons per billing cycle for use from May through October.

[1] Historical net ET is based on the average of ten years of ET data from two weather stations in Santa Rosa.

- Multi-Family services receive 36 GPCD plus a landscape allocation of 1,000 gallons (if irrigation usage is not on a separate dedicated service) per billing cycle for use from May through October.
- Commercial/Industrial/Institutional services receive 80 percent of the previous 12 months' usage or of the most recent 12-month period with no water shortage restrictions in place.
- Dedicated Irrigation Meter services receive a water budget based on 20 percent of historical net evapotranspiration based demand for the square footage of the irrigated area.
- Health care and public safety services receive 90 percent of the most recent 12-month period with no water shortage restrictions in place.

Stage 7: 50 percent overall water use reduction, with mandatory allocations assigned to each water service as follows:

- Single family and Multi-Family services receive 32 GPCD.
- Commercial/Industrial/Institutional services receive 75 percent of the previous 12 months' usage or of the most recent 12-month period with no water shortage restrictions in place.
- Dedicated Irrigation Meter services receive a water budget based on 10 percent of historical net evapotranspiration-based demand for the square footage of the irrigated area, which is encouraged to be utilized to support mature trees and shrubs.
- Health care and public safety services receive 85 percent of the most recent 12-month period with no water shortage restrictions in place.

Stage 8: Over 50 percent overall water use reduction, with mandatory allocations assigned to each service.

- Allocations shown below are for up to 60 percent mandatory reduction. However, allocations may be adjusted as needed to respond to the severity of the water shortage.
- Single Family and Multi-Family services receive 28 GPCD.
- Commercial/Industrial/Institutional services receive 70 percent of the previous 12 months' usage or of the most recent 12-month period with no water shortage restrictions in place.
- Dedicated Irrigation Meter services receive no allocation.
- Health care and public safety services receive 80 percent of the most recent 12-month period with no water shortage restrictions in place.

If a customer has an extraordinary circumstance, such as a medical condition where additional water is needed, the City reserves the right to grant an exemption to the allocations described above. See **Section 7.2 and 7.3** which describes the appeal and exemptions process, respectively.

5.2.8 Excess Use Penalties

During any water shortage emergency stage that requires water allocations (water rationing) (Stages 5 to 8), water use in excess of individual account water allocations is prohibited. The City will enforce allocations with Excess Use Penalties (EUP) for water usage that exceeds the water allocation established for each water service. **Section 7** discusses compliance and enforcement procedures.

The structure of the EUP supports a 1,999 gallon "buffer" for each customer prior to the assessment of the penalty; the penalty begins after the use is 2,000 or more gallons over the assigned allocation for that stage.

The structure of the EUP is summarized in **Table 5-4**.

TABLE 5-4: EXCESS USE PENALTY (EUP) STRUCTURE FOR STAGES 5 - 8

Excess Use Over Allocation in thousand gallon units (TGALs)	Penalty per TGAL			
	Stage 5	Stage 6	Stage 7	Stage 8
2 to 10	$ 5.00	$10.00	$20.00	$40.00
Over 10	$10.00	$20.00	$40.00	$80.00

Example One:

In Stage 5, in the month of December, single family customer one has an allocation of 5,000 gallons based on the number of people in the household. They use 6,000 gallons of water this month. No penalty is assessed as the customer is within the "buffer" of the penalty.

Example Two:

In Stage 5, in the month of December, single family customer two has an allocation of 6,000 gallons based on the number of people in the household. They use 10,000 gallons in December. They will be assessed a penalty of 10,000 - 6,000 = 4,000 extra gallons used – 1,999 gallons "buffer" = 2,001 gallons over allocation. 2,000 gallons x $5 per thousand gallons = $10 on the next bill.

The EUP is entirely avoidable by all customers. Therefore, no EUP revenues are planned for or relied upon. EUP revenues are not intended to be used as general operating revenues during the emergency but may be used to: offset the extraordinary costs of the water shortage emergency such as additional conservation support; rebuild the Catastrophic Reserve; and/or establish a rate stabilization fund for the post-emergency recovery. **Section 8** includes additional discussion about the EUP.

To help alleviate the financial burden of an EUP to the customer, the City may allow for a one-time EUP dismissal upon proof of completion of an educational workshop that addresses water use efficiency BMPs and hosted by the City. Such models referred to as "Water School" have been successful at empowering customers with the tools and resources needed to curb their use.

5.3 Shortage Response Action Effectiveness

Table 5-5 summarizes the City's water shortage response actions with their estimated water reductions for each stage using the DWR-provided categories. For each action identified, the City has estimated the extent to which that action will reduce the gap between supplies and demands city-wide. The City has estimated the effectiveness of the shortage response actions based on water use reductions that have occurred historically and on expected reductions associated with implementing the WSC, Water Allocations, and EUP in more severe shortages of 30 percent or more (such shortages have not been experienced to date in Santa Rosa). **Appendix A** provides an expanded table showing all response actions by shortage stage using the City's preferred naming convention for shortage response action.

TABLE 5-5: DEMAND REDUCTION ACTIONS (DWR TABLE 8-2)

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
1 Target: voluntary up to 10% reduction	Expand Public Information Campaign	15-20%	Based on community response to calls for reductions over the past 30 years	No
1	Offer Water Use Surveys	Less than 0.5%	Always offered. Expect increase in participation. Water savings based on 2014-2016 drought	No
1	Provide Rebates on Plumbing Fixtures and Devices	Less than 0.5%	Always offered. Expect increase in participation. Water savings based on 2014-2016 drought	No
1	Provide Rebates for Landscape Irrigation Efficiency	Less than 0.5%	Always offered. Expect increase in participation. Water savings based on 2014-2016 drought	No
1	Provide Rebates for Turf Replacement	Less than 0.5%	Always offered. Expect increase in participation. Water savings based on 2014-2016 drought	No
1	Decrease Line Flushing	Less than 0.5%	Average total annual flushing is approximately 0.5% of total water.	No
1	Increase Water Waste Patrols	Less than 0.5%	Includes all water waste enforcement efforts.	Yes
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Less than 0.5%	Always prohibited (Water Waste Ord).	Yes

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Less than 0.5%	Always prohibited (Water Waste Ord).	Yes
1	Other - Require automatic shut off nozzles on hoses	Less than 0.5%	Required for garden and utility hoses	Yes
1	Other - Prohibit use of potable water for washing hard surfaces, unless required for public health and safety purposes.	Less than 0.5%	Prohibit hosing off hard surfaces.	Yes
2 Target: up to 15% reduction	Expand Public Information Campaign	15-20%	Based on community response to calls for reductions over the past 30 years	No
2	Other	1-3%	Combined savings for actions continued from previous stage	Yes
2	Implement or Modify Drought Rate Structure or Surcharge	1-5%	Water Shortage Charge (5% of customer usage rates)	Yes
2	CII - Restaurants may only serve water upon request	Less than 0.5%		Yes
2	CII - Lodging establishment must offer opt out of linen service[1]	Less than 0.5%		Yes
3 Target: up to 20% reduction	Expand Public Information Campaign	15-20%	Based on community response to calls for reductions over the past 30 years	No
3	Other	1-3%	Combined savings for actions continued from previous stages	Yes
3	Implement or Modify Drought Rate Structure or Surcharge	5-7%	Water Shortage Charge (7.5% of customer usage rates)	Yes

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
3	Other - Prohibit use of potable water for washing hard surfaces, unless required for public health and safety purposes.	0-5%	Prohibit use of potable water for pressure washing.	Yes
3	Landscape - Limit landscape irrigation to specific times	0-15%	Irrigation limited to 8 PM to 6 AM. Savings varies based on time of year/season	Yes
4 Target: up to 25% reduction	Expand Public Information Campaign	15-20%	Based on community response to calls for reductions over the past 30 years	No
4	Other	3-5%	Combined savings for actions continued from previous stages	Yes
4	Implement or Modify Drought Rate Structure or Surcharge	7-10%	Water Shortage Charge (10% of customer usage rates)	Yes
4	Water Features - Restrict water use for decorative water features, such as fountains	Less than 0.5%	Prohibit operation of ornamental fountains and water features	Yes
5 Target: up to 30% reduction	Expand Public Information Campaign	15-20%	Based on community response to calls for reductions over the past 30 years	No
5	Other	3-5%	Combined savings for actions continued from previous stages	Yes
5	Implement or Modify Drought Rate Structure or Surcharge	10-15%	Water Shortage Charge (15% of customer usage rates)	Yes
5	Implement or Modify Drought Rate Structure or Surcharge	5-10%	Water Allocations in effect and	Yes

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
			enforced by Excess Use Penalty	
5	Other water feature or swimming pool restriction	Less than 0.5%	Prohibit filling of new pools/spas	Yes
5	Other - Prohibit use of potable water for construction and dust control	Less than 0.5%	Require use of recycled water if available and filling station within one-mile radius	Yes
5	Moratorium or Net Zero Demand Increase on New Connections	0-1%	New construction must offset demand by 1:1 ratio	Yes
6 Target: up to 40% reduction	Expand Public Information Campaign	15-20%	Based on community response to calls for reductions over the past 30 years	No
6	Other	3-5%	Combined savings for actions continued from previous stages	Yes
6	Implement or Modify Drought Rate Structure or Surcharge	15-20%	Water Shortage Charge (25% of customer usage rates)	Yes
6	Implement or Modify Drought Rate Structure or Surcharge	10-15%	Water Allocations in effect and enforced by Excess Use Penalty	Yes
6	Other water feature or swimming pool restriction	Less than 0.5%	Prohibit filling or topping off existing pools/spas	Yes
6	Landscape - Prohibit certain types of landscape irrigation	Less than 0.5%	Prohibit installation of water-using landscape at new construction	Yes

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
7 Target: up to 50% reduction	Expand Public Information Campaign	15-20%	Based on community response to calls for reductions over the past 30 years	No
7	Other	3-5%	Combined savings for actions continued from previous stages	Yes
7	Implement or Modify Drought Rate Structure or Surcharge	15-20%	Water Shortage Charge (35% of customer usage rates)	Yes
7	Implement or Modify Drought Rate Structure or Surcharge	20-25%	Water Allocations in effect and enforced by Excess Use Penalty	Yes
7	Landscape - Prohibit certain types of landscape irrigation	Less than 0.5%	Prohibit installation or replanting of any water-using landscape	Yes
8 Target: over 50% reduction	Expand Public Information Campaign	15-20%	Based on community response to calls for reductions over the past 30 years	No
8	Other	3-5%	Combined savings for actions continued from previous stages	Yes
8	Implement or Modify Drought Rate Structure or Surcharge	15-20%	Water Shortage Charge (45% of customer usage rates)	Yes
8	Implement or Modify Drought Rate Structure or Surcharge	20-25%	Water Allocations in effect and enforced by Excess Use Penalty	Yes

Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
8	Landscape - Prohibit all landscape irrigation	0-20%	Savings varies based on time of year/season	Yes
NOTES: (1) Stage 2 "CII - Lodging establishment must offer opt out of linen service" includes short-term rentals.				

6. COMMUNICATION PROTOCOLS

When a water shortage level is triggered by the AWSDA (or for any reason), the City's Water Department will convene a Water Shortage Communication Team to work with the City's Public Information Office to gain assistance. The City will also coordinate with other local water suppliers and the Sonoma Marin Saving Water Partnership to ensure messaging and outreach efforts remain consistent with and leverage the scope and extent of regional outreach efforts.

The Water Shortage Communication Team will keep stakeholders up to date on critical issues, such as:

- Current or anticipated water shortage level
- Corresponding water use reduction target
- Prohibitions and restrictions on water use
- Shortage response actions water users can take to eliminate water waste, minimize non-essential uses, conserve water, and improve water use efficiency
- Available assistance from the City's Water Use Efficiency program such as rebates, technical assistance, site evaluations, do-it-yourself kits, workshops, free fixtures, and other resources
- Water Shortage Charge (Stages 2-8)
- Water shortage allocations (Stages 5-8)
- Excess Use Penalties (Stages 5-8)

Printed and online messaging materials will be available in English and Spanish. Communication channels to reach these stakeholders will leverage a range of avenues, such as:

- Bill inserts and envelope messaging
- Letters and other direct mail (such as postcards) to customers
- Direct outreach efforts to reach target markets, such as high use customers, residential customers, and other stakeholders (e.g., property managers and landscape professionals)
- Social media posts
- Media releases
- Updated website content
- Santa Rosa's City Connections e-newsletter
- Ad buys: Radio, Print, Digital, and Social Media
- Presentations to City and regional policy makers and governing bodies
- Presentations to civic groups, nonprofits, businesses, large employers, schools
- Information booths at local events, fairs, festivals, etc.
- Partnering with community groups such as Community Action Partnership, business districts, Latino Service Providers, and other key stakeholders
- Meetings with officials and regulators and reports documenting regulatory compliance

If a water shortage occurs due to a catastrophic event (for example, earthquake, wildfire, or infrastructure failure), the City's then-current emergency response communication protocols will be implemented.

Appendix B provides a table listing the shortage response actions for Stages 1 through 8 and the associated communication protocols for each shortage level.

7. COMPLIANCE AND ENFORCEMENT

This section describes how the City will ensure compliance with, and enforcement of, provisions of this Shortage Plan. The City's procedures include protocols for treatment of violations and actions associated with more egregious levels of violation. The procedures include appeal and exemption processes.

The City employs multiple methodologies to enforce prohibitions and restrictions on end uses identified in **Table 5-5** (DWR Table 8-2) of this Shortage Plan, including exceedances of water allocations in shortage Stages 5 through 8. Primarily, the City relies on outreach and education to ensure customers are aware of water shortage conditions and the corresponding prohibitions and restrictions that exist for the declared water shortage stage.

The City's enforcement approach is progressive to the extent feasible, starting with customer service, education, and communication programs. Customers will be notified of violations and offered technical assistance to help them come back into compliance. In response to unresolved violations, enforcement action will then include one or more written warnings. If the customer still does not comply, the City may take progressive actions such administering a fine onto the water bill and ultimately shutting off water service if necessary. In addition to these actions, the City will enforce water allocations with EUPs for customers that exceed their delineated water service allocations in Water Shortage Stages 5 through 8 according to the procedures outlined below. See **Section 9** of this Shortage Plan for additional information about water allocations and the EUP.

7.1 Compliance and Enforcement Procedures

Customer Education: The first step for ensuring customer compliance during a water shortage will be to proactively inform customers about the water shortage condition, water use reduction target, and prohibitions and restrictions on end uses, including water-service-specific water allocations described in **Section 5.2.7**. In addition, customers will be informed of the City's water use efficiency programs and assistance to help customers comply with the Shortage Plan. Customer education will be accomplished by implementing the Communication Plan discussed in **Section 6** and detailed in **Appendix B**.

Reports: The City anticipates receiving reports of potential violations from a range of sources, such as the general public, the City's online reporting tool, the City's Water Waste Patrol, other City staff, automated AMI alerts of continuous use, and automated billing system alerts of unusually high use during a billing cycle.

Investigations: When the City receives a report of a violation of prohibitions or restrictions (including water waste and irrigation malfunctions), staff will take steps to determine whether a violation occurred and whether it has been resolved. Investigative steps may include (and are not limited to) actions such as seeking additional information from reporting parties, attempting to observe the violation directly, contacting the customer to gather additional information, and/or reviewing customer water use data directly or through automated processes (for example, for water allocation exceedances in Stages 5-8). Cases that appear to violate other City codes or regulations (for example, by causing or threatening harm to property, public health and safety, creeks, etc.) will be referred to other City staff as needed for corresponding investigation and enforcement.

Initial Notice/First Warning: When following up on a customer's first violation, staff will attempt to contact the customer by phone, email, and/or by mail to inform them of the violation and compliance requirements, including the timeline for resolving the violation and consequences for noncompliance. In non-urgent cases, if the customer is actively working toward resolving the issue, the deadline to comply may be extended. Staff will also offer to provide information about available City assistance and programs (to the extent relevant and feasible) which may help the customer come into compliance. The verbal and written notices are intended to serve as educational resources to inform the customers about water waste prohibitions, water use restrictions, the violation, the period for resolving the violation, and information about available City technical assistance and programs.

Second Warning: If the violation remains unresolved within the time specified in the First Warning, staff will send a Second Warning letter. It will reference the date of the First Warning Letter. It will also include the same or similar information as outlined for the First Letter, including the period for resolving the issue and information about the consequences of noncompliance as well as appeal and exemption processes. In non-urgent cases in which the customer is making progress, the period for resolving the issue may be extended to three weeks after the date of the Second Warning letter.

Third Warning: If the violation remains unresolved within the time specified in Second Warning letter, a Third Warning letter signed by the Director or their designee will be sent to the customer to inform them that City action is imminent if the violation is not corrected by a date certain. The letter will indicate which of these will occur: water service shut off and/or other enforcement action deemed appropriate by the Director of Water or their designee. Water allocation violations will be subject to the EUP. The letter will also indicate the dates of the Initial Notice/First Warning and Second Warning letter and include appeal and exemption processes. In most cases, the period for resolving the issue may be as short as a few days after the date of the Third Warning letter.

Urgent Cases: If at any time during an investigation or enforcement process it is discovered that a violation appears to be urgent and warrants immediate City action, the City will seek to contact the customer directly by phone or in person to inform them of the violation, the need for immediate corrective action by a date certain, and the imminent action(s), including water service shut off, that the City will take if the violation is not resolved by that date. The Director or their designee will also provide this information in writing to the customer. In most cases, the period for resolving the issue may be 15 or fewer days after the date of the urgent warning letter.

Multiple Violations: If a water service is found to have at least three violations within a rolling six-month period during a water shortage, enforcement may be elevated to Urgent status.

7.2 Appeal Process

If a Water customer wishes to appeal a City action taken in response to a violation, the customer may file an appeal in writing within 21 days (3 weeks) of the written notification of the violation to:

WaterResources@srcity.org

or

Deputy Director of Water Resources
Santa Rosa Water

69 Stony Circle
Santa Rosa, CA 95401

The Deputy Director or designee will decide on the matter within 30 calendar days of receiving the appeal. The appeal should include:

- The street address of the subject property
- The water account number
- The water customer's name, phone number, mailing address, and, if available, email address
- An explanation of the grounds upon which the appeal is being filed
- The specific action the customer wishes the Deputy Director to take
- The appeal must be signed by the Water customer and dated

If a customer is not satisfied with the decision, an appeal may be filed within 30 days of the decision to:

Director of Santa Rosa Water
69 Stony Circle
Santa Rosa, CA 95401

The Director will decide on the matter within 30 calendar days of receiving the appeal. The Director's decision is final.

7.3 Exemption and Reassessment Process

If a Water customer wishes to request an exemption from a water use prohibition or restriction, or if a customer wishes to request a reassessment of the water allocation assigned to a Water service, the customer must file a request in writing to:

WaterResources@srcity.org

or

Deputy Director of Water Resources
Santa Rosa Water
69 Stony Circle
Santa Rosa, CA 95401

The Deputy Director or designee will decide on the matter within 30 calendar days of receiving the request.

The request should include:

- The prohibition, restriction, or water allocation of concern
- The street address of the subject property
- The water account number
- The water customer's name, phone number, mailing address, and, if available, email address

- An explanation of the grounds upon which the request for exemption or allocation reassessment is being requested; for example, grounds might include documentation of a significant health and safety need that must be met
- The specific action the customer wishes the Deputy Director to take
- The request must be signed by the Water customer and dated

If a customer is not satisfied with the decision, a request may be filed within 30 days of the decision to:

Director of Santa Rosa Water
69 Stony Circle
Santa Rosa, CA 95401

The Director will decide on the matter within 30 calendar days of receiving the appeal. The Director's decision is final.

8. LEGAL AUTHORITIES

At the time of a water shortage emergency, the Santa Rosa City Council will, by resolution, declare a state of water shortage emergency and empower enactment of the Water Shortage Contingency Plan. A draft Water Shortage Emergency Resolution is found in **Appendix C**. With water emergencies that trigger the WSC rate structure (Stages 2 through 8), water allocations (Stages 5 through 8), or the EUP (Stages 5 through 8), the City Council will also adopt an ordinance.

If a water shortage emergency occurs while the City Council cannot assemble to adopt a Water Shortage Emergency Resolution or Ordinance, the City Manager, or designee, is authorized to implement the appropriate stage of the Shortage Plan based on the reduction in water supply. The determination by the City Manager, or designee, to implement the Shortage Plan shall remain effective until the City Council meeting immediately following such determination, at which time the Santa Rosa City Council will consider adopting a Water Shortage Resolution or Ordinance.

The City's public water system does not provide potable water service to other cities or counties. However, if it does so in the future, the City will coordinate with any city or county within which it provides water supply services for the possible proclamation of a local emergency, as defined in Section 8558 of the Government Code.

9. FINANCIAL CONSEQUENCES OF WATER SHORTAGE CONTINGENCY PLAN

This section describes the potential revenue reductions and expense increases associated with activating shortage response actions and describes the City's mitigation actions. The water rate structure changes during water shortages are necessary to help cover water system costs and protect the financial stability of the water system as water demands are reduced. In addition, changes to the water rate structure are designed to encourage customers to reduce water use commensurate with water use reduction targets.

9.1 Revenue and Expenditure Impacts

Under normal water conditions and in Stage 1 (with a voluntary community-wide water use reduction target of 10 percent), the City's water rate structure is designed to encourage efficient water use. This is achieved through a low fixed service charge and relatively high usage rates applicable to each unit of water use. This conservation-oriented rate structure introduces some financial risk in that a significant portion of fixed costs is recovered through the usage charge, based on water usage.

The City's water rate structure consists of a two-tier water rate structure for Single Family and Duplex Residential customers, a uniform water usage rate structure for Multi-Family Residential and CII customers, and a water-budget based two-tier water rate structure for Dedicated Irrigation customers. As of July 2025, the normal water usage rates per 1,000 gallons are listed in **Table 9-1**. The water rate structure also includes fixed monthly service charges, which vary with the size of the water meter.

TABLE 9-1: WATER USAGE RATES EFFECTIVE JULY 2025

Customer Sector	Water Usage Rates per 1,000 Gallons
Single Family and Duplex Residential Tiered Rate	
Tier 1 (up to sewer cap)	$ 7.21
Tier 2 (above sewer cap)	$ 8.43
Single Family with No Irrigation Needs	$ 7.21
Multi-Family Residential	$ 7.66
Commercial, Industrial, & Institutional	$ 7.66
Irrigation Water-Budget Based Tiered Rate	
Tier 1 (up to 125 percent of water budget)	$ 7.33
Tier 2 (above 125 percent of water budget)	$ 9.36
Irrigation Water-Budget Based Tiered Rate (Recycled Water)	
Tier 1 (up to 125 percent of water budget)	$ 6.96
Tier 2 (above 125 percent of water budget)	$ 9.36

During water shortage emergencies, a reduction in water usage can result in revenues not covering all fixed costs. In addition, implementing triggered water shortage response actions and procedures for compliance and enforcement will lead to an increase in costs. To address this, the City has developed three approaches for its water shortage financial strategy and rate structure. They are summarized here and discussed below:

- Water customers will be subject to an increased water usage charge (WSC) during Stage 2 through Stage 8 to help cover water system costs, encourage water conservation, and help protect the financial condition of the water utility. The WSC (described below and in **Section 5.2.6**) is designed such that customers meeting use reduction goals will have lower water bills than they do with standard rates and normal usage.
- In Stages 1 through 8, Undesignated Reserves and/or the Catastrophic Reserve may be drawn down to absorb part of the financial deficit caused by a reduction in water rate revenues (due to lower water sales) and increase in costs (due to implementation of triggered water shortage actions and procedures for compliance and enforcement).
- Reductions in Capital Improvement Program expenditures can be implemented in Stage 2 through Stage 8 to offset reduced revenue resulting from decreased water sales and increased costs resulting from implementation of the Shortage Plan.

The WSC is designed to recover a portion of revenue reductions during water shortage Stages 2 through 8. The EUP is designed to reinforce the importance of limiting water use to water allocations in Stages 5 through 8 and is not designed to address revenue shortfalls associated with water shortages.

9.1.1 Water Shortage Charge

Water usage rates during a shortage condition will be based on modifications to the water rate structure in place at the time of the declared emergency for all water sold in Stages 2 through 8. The WSC is added on top of each unit of water sold and will help recover a portion of revenue shortfalls due to declining water sales and increasing costs for responding to the water shortage. The WSC is designed such that a typical customer's bill will not change significantly even though the water usage rates are increased (this assumes the typical customer will reduce water usage consistent with use reduction goals).

Beginning in Stage 5 and continuing through Stage 8, the tiered water usage rates for Single Family Residential and Dedicated Irrigation services are eliminated and the uniform water usage rate applicable to Multi-Family Residential and CII services is imposed on all customer services. **Table 9-2** illustrates incremental changes in the WSC as a function of the shortage stage.

TABLE 9-2: WATER SHORTAGE CHARGE (WSC) FOR ALL WATER SOLD – STAGES 2 THROUGH 8

Stage	Single Family and Duplex Accounts	Dedicated Irrigation Accounts	Multi-Family Residential Accounts (3 units or more)	Commercial, Industrial, Institutional, Health , Safety
2	5 Percent of Tier 1 & Tier 2 Rates		5 percent of Uniform Rate	
3	7.5 Percent of Tier 1 & Tier 2 Rates		7.5 percent of Uniform Rate	
4	10 Percent of Tier 1 & Tier 2 Rates		10 percent of Uniform Rate	
5	15 percent of Uniform Rate			
6	25 percent of Uniform Rate			
7	35 percent of Uniform Rate			
8	45 percent of Uniform Rate			

9.1.2 Excess Use Penalty

During water shortage Stages 5 through 8, water allocations are assigned to all service connections and water use in excess of individual account water allocations is prohibited (see more details in **Section 5.2.7**). Water allocations will be enforced with the EUP for water usage that exceeds the water allocation established for each water service. The EUP provides an inclining penalty structure designed to reinforce the need for all customers to limit water use to the assigned water allocations. Customers who achieve the reduction target will not be penalized. Customers who exceed their water allocation will be subject to an EUP (see more details and an example in **Section 5.2.8**). See **Section 7** for compliance and enforcement procedures.

The structure of the EUP is summarized in **Table 9-3** (same as **Table 5-4** in **Section 5.2.8**).

TABLE 9-3: EXCESS USE PENALTY (EUP) STRUCTURE FOR STAGES 5 - 8

Excess Use Over Allocation in thousand-gallon units (TGALs)	Penalty per TGAL			
	Stage 5	Stage 6	Stage 7	Stage 8
2 to 10	$ 5.00	$10.00	$20.00	$40.00
Over 10	$10.00	$20.00	$40.00	$80.00

EUPs are entirely avoidable by all customers. Therefore, EUP revenues are not intended to be used as general operating revenues during the emergency and are not considered an element of the water shortage financial strategy and rate structure but may be used to offset the extraordinary costs of the water shortage emergency such as additional conservation support, to rebuild the Catastrophic Reserve, and/or to establish a rate stabilization fund for the post-emergency recovery.

9.1.3 Water Shortage Charge Rate and Excess Use Penalty Structure and Impact

Table 9-4 summarizes the WSC rate structure and the EUP structure for each water shortage stage based on the current (effective July 2025) water rates.

TABLE 9-4: WATER SHORTAGE RATE STRUCTURES – JULY 2025[a]

	Normal Water Usage Rates[b]	Water Use Reduction Ranges[c]						
		Stage 2 11% to 15%	Stage 3 16% to 20%	Stage 4 21% to 25%	Stage 5 26% to 30%	Stage 6 31% to 40%	Stage 7 41% to 50%	Stage 8 Over 50%
Water Shortage Charge[d]	-	5%	7.5%	10%	15%	25%	35%	45%
Excess Use Penalties[e]	-	-	-	-	Penalty based on amount of use over allocation (per thousand-gallon unit)			
Water Usage Rates ($/1,000 gallons)								
Single Family and Duplex Accounts								
Tier 1	$7.21	$7.57	$7.75	$7.93	-	-	-	-
Tier 2	$8.43	$8.85	$9.06	$9.27	-	-	-	-
Single Family with No Irrigation Needs								
All water use	$7.21	$7.57	$7.75	$7.93	-	-	-	-
Multi-Family/Comm./Indus./Inst.								
All water use	$7.66	$8.04	$8.23	$8.43	-	-	-	-
Irrigation (potable water)								
Tier 1	$7.33	$7.70	$7.88	$8.06	-	-	-	-
Tier 2	9.36	$9.83	$10.06	$10.30	-	-	-	-
Irrigation (recycled water)								
Tier 1	$6.96	$7.31	$7.48	$7.66	-	-	-	-
Tier 2	9.36	$9.83	$10.06	$10.30	-	-	-	-
All Water Customers								
Water use up to 100% of water allocation	-	-	-	-	$8.81	$9.58	$10.34	$11.11
Excess Use Penalties for use over allocation	-	-	-	-	Penalty based on amount of use over allocation (per thousand-gallon unit)[e]			

(a) Water shortage charges and excess use penalties are expressed as percentages applied to normal water usage rates. Monthly service charges are unaffected by the water shortage rates and charges. The normal water usage rates shown herein are the water usage rates proposed for July 2025 and are used for illustrative purposes.

(b) Applies to normal water conditions and Stage 1 water shortages.

(c) Stages 2 through 8 are mandatory water reduction stages.

(d) When the water use reduction goal exceeds 10 percent, the normal water usage rates are increased by the water shortage charge percentage shown. The water shortage charge increment provides supplemental revenue to help bridge the financial deficit created by shortage conditions.

(e) Penalties are shown in Table 5-2 and Table 9-3.

Table 9-5 details the City's projected annual revenue and expenditure status (based on a normalized budget and water supply/demand condition for Fiscal Year (FY) 24-25) in non-shortage (normal supply) conditions and at each stage in the water shortage program.

TABLE 9-5: IMPACT OF WATER SHORTAGE ON REVENUES AND EXPENDITURES WITH PROPOSED WATER SHORTAGE STRATEGY (FY 24-25)

	2025	Water Use Reduction Ranges								
	Normal Supply (1)	Stage 1 Voluntary Up to 10%	Stage 2 Mandatory 11% to 15%	Stage 3 Mandatory 16% to 20%	Stage 4 Mandatory 21% to 25%	Stage 5 Mandatory 26% to 30%	Stage 6 Mandatory 31% to 40%	Stage 7 Mandatory 41% to 50%	Stage 8 Mandatory Over 50%
Modeled Water Use Reduction -->	0%	10%	15%	20%	25%	30%	40%	50%	60%
Water Sales (AF) -->	17,196	15,476	14,616	13,757	12,897	12,037	10,317	8,598	6,878
Sources of Funds									
Fixed Charge Revenue (2)	$ 13,681,000	$ 13,681,000	$ 13,681,000	$ 13,681,000	$ 13,681,000	$ 13,681,000	$ 13,681,000	$ 13,681,000	$ 13,681,000
Commodity Revenue (Sale of Water) (2)	$ 37,303,750	$ 33,573,375	$ 31,708,188	$ 29,843,000	$ 27,977,813	$ 26,112,625	$ 22,382,250	$ 18,651,875	$ 14,921,500
Water Shortage Charge Rev. (3)			$ 1,585,409	$ 2,238,225	$ 2,797,781	$ 3,916,894	$ 5,595,563	$ 6,528,156	$ 6,714,675
Misscellaneous Revenues	$ 5,699,000	$ 5,699,000	$ 5,699,000	$ 5,699,000	$ 5,699,000	$ 5,699,000	$ 5,699,000	$ 5,699,000	$ 5,699,000
Total Sources of Funds	$ 56,683,750	$ 52,953,375	$ 52,673,597	$ 51,461,225	$ 50,155,594	$ 49,409,519	$ 47,357,813	$ 44,560,031	$ 41,016,175
(% of normal)		93%	93%	91%	88%	87%	84%	79%	72%
Uses of Funds (10)									
Salaries & Benefits	$ 8,226,000	$ 8,226,000	$ 8,226,000	$ 8,226,000	$ 8,226,000	$ 8,226,000	$ 8,226,000	$ 8,226,000	$ 8,226,000
Maintenance and Services	$ 4,913,000	$ 4,913,000	$ 4,913,000	$ 4,913,000	$ 4,913,000	$ 4,913,000	$ 4,913,000	$ 4,913,000	$ 4,913,000
Minor Capital	$ 83,000	$ 83,000	$ 83,000	$ 83,000	$ 83,000	$ 83,000	$ 83,000	$ 83,000	$ 83,000
Water Purchases (4)	$ 19,405,000	$ 17,465,000	$ 16,494,000	$ 15,524,000	$ 14,554,000	$ 13,584,000	$ 11,643,000	$ 9,703,000	$ 7,762,000
Utilities and Chemicals (4)	$ 1,400,000	$ 1,260,000	$ 1,190,000	$ 1,120,000	$ 1,050,000	$ 980,000	$ 840,000	$ 700,000	$ 560,000
Administrative Allocation	$ 4,751,000	$ 4,751,000	$ 4,751,000	$ 4,751,000	$ 4,751,000	$ 4,751,000	$ 4,751,000	$ 4,751,000	$ 4,751,000
Utility Billing Services	$ 2,419,000	$ 2,419,000	$ 2,419,000	$ 2,419,000	$ 2,419,000	$ 2,419,000	$ 2,419,000	$ 2,419,000	$ 2,419,000
Water Conservation (5)	$ 1,000,000	$ 1,100,000	$ 1,150,000	$ 1,200,000	$ 1,250,000	$ 1,300,000	$ 1,400,000	$ 1,500,000	$ 1,600,000
O&M Projects	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000	$ 125,000
Recycled Water Purchases	$ 34,000	$ 34,000	$ 34,000	$ 34,000	$ 34,000	$ 34,000	$ 34,000	$ 34,000	$ 34,000
Turnback @ 5%	$ (1,148,000)	$ (1,148,000)	$ (1,148,000)	$ (1,148,000)	$ (1,148,000)	$ (1,148,000)	$ (1,148,000)	$ (1,148,000)	$ (1,148,000)
Transfers To:									
Utility Undrgrnd. Impact Fund	$ 2,229,000	$ 2,229,000	$ 2,229,000	$ 2,229,000	$ 2,229,000	$ 2,229,000	$ 2,229,000	$ 2,229,000	$ 2,229,000
Debt Service Funds	$ 1,666,000	$ 1,666,000	$ 1,666,000	$ 1,666,000	$ 1,666,000	$ 1,666,000	$ 1,666,000	$ 1,666,000	$ 1,666,000
Capital Projects (Approp.) (6)	$ 9,469,000	$ 9,469,000	$ 9,469,000	$ 9,469,000	$ 9,469,000	$ 9,469,000	$ 9,469,000	$ 9,469,000	$ 9,469,000
Other Funds/Reserves	$ 2,111,750	$ 2,111,750	$ 2,111,750	$ 2,111,750	$ 2,111,750	$ 2,111,750	$ 2,111,750	$ 2,111,750	$ 2,111,750
Total Uses of Funds	$ 56,683,750	$ 54,703,750	$ 53,712,750	$ 52,722,750	$ 51,732,750	$ 50,742,750	$ 48,761,750	$ 46,781,750	$ 44,800,750
(% of normal)		97%	95%	93%	91%	90%	86%	83%	79%
Surplus/(Deficit) in Operations	**$ -**	**$ (1,750,375)**	**$ (1,039,153)**	**$ (1,261,525)**	**$ (1,577,156)**	**$ (1,333,231)**	**$ (1,403,938)**	**$ (2,221,719)**	**$ (3,784,575)**
Catastrophic Reserve									
Available Balance (7)	$ 17,500,000	$ 17,500,000	$ 17,500,000	$ 17,500,000	$ 17,500,000	$ 17,500,000	$ 17,500,000	$ 17,500,000	$ 17,500,000
Excess Use Penalty Revenue (8)						$ -	$ -	$ -	$ -
Used to Cover Oper. Deficit (9)	$ -	$ (1,750,375)	$ (1,039,153)	$ (1,261,525)	$ (1,577,156)	$ (1,333,231)	$ (1,403,938)	$ (2,221,719)	$ (3,784,575)
Ending Balance (after 1 year)	$ 17,500,000	$ 15,749,625	$ 16,460,847	$ 16,238,475	$ 15,922,844	$ 16,166,769	$ 16,096,063	$ 15,278,281	$ 13,715,425
Water Shortage Charge			**5%**	**7.5%**	**10%**	**15%**	**25%**	**35%**	**45%**

(1) Reflects estimated FY 25 revenues and expenses under "normal" budgetary, water supply, water demand, and economic conditions, as a basis for financial analysis. Normal water demand, revenues, and expenses were derived from the 2024 water rate study recently completed by the City.

(2) Source: Attachment 1 - 2024 Water and WasteWater Rate Study Report

(3) Pass through rate revenue. Only includes water sold (production and purchased).

(3) Shortage charges are imposed in conjunction with mandatory measures when the use reduction goal exceeds 10 percent and escalate through higher stages to limit the operating deficit.

(4) Water purchases, energy, and chemical costs would all decline in proportion to reduced water usage.

(5) Water conservation and demand management costs would increase in inverse proportion to reduced water sales.

(6) Funding of the capital program could be restricted when the use reduction goal exceeds 10 percent to help bridge the financial deficit and lessen the impact on reserves.

(7) Assumes Catastrophic Reserve is fully funded and available at the outset of a water shortage. Undesignated reserves may also be available at the outset of a water shortage and would be used prior to drawing from the Catastrophic Reserve.

(8) Excess use penalties would be imposed in Stages 5, 6, 7, and 8, but are not expected to generate any revenue, as the penalties can be avoided. Any penalty revenue received would be used to replenish the Catastrophic Reserve and/or fund conservation activities.

(9) Undesignated Reserves and/or the Catastrophic Reserve would be used to offset any operational deficit.

(10) Bold and purple indicates Fixed Costs that are not affected by a water shortage.

Table 9-6 summarizes a sample water bill (not including wastewater fees) for an average Single Family Residential service that uses water consistent with the use reduction goals compared to a sample bill for an average Single Family Residential service that does not reduce water use during declared shortages. Customers who reduce their water use consistent with declared water use reduction goals should expect to see a decrease in the water portion of their monthly utility bill.

TABLE 9-6: SAMPLE SINGLE FAMILY RESIDENTIAL CHARGES

Shortage Stage	Single Family Use Reduction Goal[a]	Monthly Water Use, Gallons	Monthly Service Charge	Water Usage Charge	Water Shortage Charge	Household Water Allocation (gal)[b]	Calculated Excess Use (gal)[d]	Excess Use Penalty	Total Monthly Water Bill	Change from Normal Bill[e]
Average Single Family Customer Meeting Reduction Goals[b]										
Normal Conditions	0%	10,000	$15.38	$80.03	n/a	n/a	n/a	n/a	$95.41	
Stage 1	10%	9,000	$15.38	$71.60	n/a	n/a	n/a	n/a	$86.98	($8.43)
Stage 2	15%	8,500	$15.38	$67.39	$3.37	n/a	n/a	n/a	$86.14	($9.28)
Stage 3	20%	8,000	$15.38	$63.17	$4.74	n/a	n/a	n/a	$83.29	($12.12)
Stage 4	25%	7,500	$15.38	$58.96	$5.90	n/a	n/a	n/a	$80.24	($15.18)
Stage 5	(c)	6,500	$15.38	$49.79	$7.47	3,600	0	$0.00	$72.64	($22.77)
Stage 6	(c)	4,900	$15.38	$37.53	$9.38	3,240	0	$0.00	$62.29	($33.12)
Stage 7	(c)	3,200	$15.38	$24.51	$8.58	2,880	0	$0.00	$48.47	($46.94)
Stage 8	(c)	2,700	$15.38	$20.68	$9.31	2,520	0	$0.00	$45.37	($50.04)
Average Single-Family Customer with No Water Use Reduction [b]										
Normal Conditions	0%	10,000	$15.38	$80.03	n/a	n/a	n/a	n/a	$95.41	
Stage 1	10%	10,000	$15.38	$80.03	n/a	n/a	n/a	n/a	$95.41	$0.00
Stage 2	15%	10,000	$15.38	$80.03	$4.00	n/a	n/a	n/a	$99.41	$4.00
Stage 3	20%	10,000	$15.38	$80.03	$6.00	n/a	n/a	n/a	$101.41	$6.00
Stage 4	25%	10,000	$15.38	$80.03	$8.00	n/a	n/a	n/a	$103.41	$8.00
Stage 5	(c)	10,000	$15.38	$76.60	$11.49	3,600	4,000	$40.00	$143.47	$48.06
Stage 6	(c)	10,000	$15.38	$76.60	$19.15	3,240	4,000	$80.00	$191.13	$95.72
Stage 7	(c)	10,000	$15.38	$76.60	$26.81	2,880	5,000	$200.00	$318.79	$223.38
Stage 8	(c)	10,000	$15.38	$76.60	$34.47	2,520	5,000	$400.00	$526.45	$431.04

(a) Stage 1 water reduction goal is voluntary. Stages 2-5 water reduction goals are mandatory.

(b) Assumes Single Family customer with 5/8" meter, a 3-person household allocation (per-person allocation decrease by stage), and a wintertime month that doesn't include an allocation for summer irrigation.

(c) During Stages 5, 6, 7, and 8 customers would be subject to specific water allocations in order to meet required use reduction targets.

(d) Calculated Excess Use is (Monthly Water Use) - (Household Water Allocation) - (1,999 gal buffer), rounded down to the nearest 1,000 gal.

(e) Comparison is with water bill based on normal water usage and standard water rates.

9.2 Use of Reserves

To compensate for loss of revenue from reduced water sales and for increased costs for implementing water shortage responses and compliance and enforcement efforts, the Undesignated Reserve and/or Catastrophic Reserve may be employed in Stages 1 through 8. In the event of a water shortage, adoption of a Water Shortage Resolution by the Santa Rosa City Council will allow the appropriation of funds from these reserves, which may be drawn down to absorb part of the financial deficit caused by a reduction in water rate revenues (due to lower water sales) and increase in costs (due to implementation of triggered water shortage actions and procedures for compliance and enforcement) that exceeds the reduction in operating costs during a water shortage emergency. This discretionary decision to draw down reserves would be made at the time of a water shortage and would depend on conditions that may exist at that time.

9.3 Capital Improvement Program Reductions

As progressive stages of the Shortage Plan are enacted, an additional measure may be taken to stabilize the financial outlook for the utility. Reductions in Capital Improvement Program expenditures could be implemented in Stage 2 through Stage 8. A decrease in capital spending would help to reduce the depletion of available reserves, as well as offset revenue losses resulting from decreased water sales and increased costs resulting from implementation of triggered water shortage actions and procedures for compliance and enforcement. This discretionary decision to reduce capital spending would be made at the time of a water shortage and would depend on conditions that may exist at that time.

10. MONITORING AND REPORTING

Monitoring and reporting are essential for evaluating whether response actions are achieving their intended water use reduction purposes or if improvements or new actions need to be considered.

During all water supply conditions, the City collects, tracks, and analyzes water use data and submits monthly reports to the State on urban water use.

In Stages 1 through 4, the water reduction target ranges from 10 percent (Stage 1) to 25 percent (Stage 4). The water use reduction targets associated with each stage apply to all customers and are not allocation based. As such, the water use reduction targets for Stages 1 through 4 will be implemented as community-wide targets, and compliance will be tracked based on community-wide water use. During all water supply conditions (including normal and shortage conditions), the City monitors water use and water supply volumes on a monthly basis. All City services are metered and delivery volumes are recorded monthly. In addition, water purchased from Sonoma Water and water produced by the City's wells are separately metered and recorded monthly. During shortage conditions, the City also tracks which shortage response actions are being implemented. During water shortage Stages 1 through 4, the City will monitor overall water use each month compared to planned use under normal water conditions, using existing tracking systems to assess progress toward achieving the reduction target.

In Stages 5 through 8, the water reduction target ranges from 30 percent (Stage 5) to over 50 percent (Stage 8). During these stages, each water service will be assigned its own water allocation, and the water use reduction targets for Stages 5 through 8 will be achieved based on customer adherence to these allocations. Progress on achieving the water reduction target will be tracked both on a community-wide basis and on a service-by-service basis to identify whether customers are adhering to their allocations. The City tracks deliveries to each service monthly and tracks water supply volume by source each month. In addition, the City assigns each water service to a customer sector (e.g., Single Family Residential) and regularly collects pertinent information necessary for calculating allocations each month (e.g., number of residents per dwelling unit). Furthermore, the City's AMI technology can allow for monitoring customer water usage as frequently as deemed necessary for assessing compliance with allocations and helping customers achieve the reduction goal. The City will monitor overall water use each month compared to anticipated use under normal water conditions and will monitor use compared to customer allocations.

If reduction goals are not met through implementation of the Shortage Plan (during any water shortage Stage), the Director will notify the Board of Public Utilities and City Council and more aggressive action will be taken. Additionally, if it is determined that this Shortage Plan requires refinements to achieve reduction targets, the City will revise the Shortage Plan according to the procedures discussed in **Section 11** and then adopt it and make it available as discussed in **Section 12**.

11. SHORTAGE PLAN REFINEMENT PROCEDURES

The Shortage Plan is best prepared and implemented as an adaptive management plan. Therefore, the City will use the results of its monitoring and reporting program described in **Section 9** to evaluate whether this Shortage Plan requires refinements to ensure that its shortage response actions are effective and produce the desired results.

If it is determined that revised procedures and/or new or expanded actions would improve the Shortage Plan, the City will revise the Shortage Plan accordingly and then follow the procedures discussed in **Section 12** to adopt the revised plan, submit it to DWR, and make it available to the public.

12. PLAN ADOPTION, SUBMITTAL, AND AVAILABILITY

This section provides information regarding the notification, public hearing, adoption, and submittal of the City's 2025 Water Shortage Contingency Plan. These processes were completed in parallel with those of the City's 2025 UWMP. This section also includes discussion on implementation of the Shortage Plan.

12.1 Notice of Public Hearing

In accordance with CWC section 10642, the City must provide an opportunity for the public to provide input on the Shortage Plan and any amendments which may occur. The City must consider all public input prior to its adoption. There are two audiences to be notified for the public hearing: cities and counties, and the public.

12.1.1 Notice to Cities and Counties Regarding Preparation of the 2025 Shortage Plan

Per CWC Section 10621, notice regarding preparation of the Shortage Plan was sent to Sonoma County and neighboring cities more than 60 days prior to the public hearing date as noted in **Table 12-1**. The notice of preparation sent to the County, local cities, and regional partners is included in Appendix B to the 2025 UWMP.

The City coordinated the preparation of its Shortage Plan internally and coordinated the preparation of its water resiliency analysis (for the UWMP) both internally and with Sonoma Water and the agencies participating in the Regional Alliance for SB X7-7 compliance.

Upon substantial completion of the 2025 UWMP and Shortage Plan, the City provided the same agencies, including internally within the City and Sonoma County, notice of public hearing.

Notifications to cities and counties in accordance with the UWMP Act, are summarized in **Table 12-1**. In addition, the City notified Marin Municipal Water District, North Marin Water District, and Valley of the Moon Water District as well as the Santa Rosa Plain Groundwater Sustainability Agency.

TABLE 12-1: NOTIFICATION TO CITIES AND COUNTIES (DWR TABLE 10-1 RETAIL)

City Name	60 Day Notice	Notice of Public Hearing
City of Cotai	Yes	Yes
City of Petaluma	Yes	Yes
City of Rohnert Park	Yes	Yes
City of Sebastopol	Yes	Yes
City of Sonoma	Yes	Yes
Town of Windsor	Yes	Yes
County Name	**60 Day Notice**	**Notice of Public Hearing**
Sonoma County	Yes	Yes

12.1.2 Notice to the Public for the 2025 Shortage Plan

To encourage community and public input on the development of the Shortage Plan, the City included information about its preparation and how to participate through an insert in the Water bill and social media posts. The City also held a publicly noticed meeting of the City's Water Conservation Subcommittee of the Board of Public Utilities and held meetings of the Board of Public Utilities and Santa Rosa City Council. The City also developed a dedicated webpage (srcity.org/UWMP) to provide information to the public related to development of the Shortage Plan and to provide access to the document for public review and comment.

Following completion of the Draft Shortage Plan, a notification of public hearing was placed in the local newspaper (Santa Rosa Press Democrat) about the 2025 Shortage Plan update process, and copies of the Draft Shortage Plan were made available online on the City's website. During the public review period, local cities, and Sonoma County, as well as the general public, were encouraged to comment on the draft document which was available online at srcity.org/UWMP. Noticing for the public hearing was conducted pursuant to Section 6066 of the Government Code. Public hearing notifications were published in The Press Democrat. Copies of the published Notice of Public Hearing are included in Appendix B to the 2025 UWMP. In addition, the City notified Sonoma Water, Marin Municipal Water District, North Marin Water District, and Valley of the Moon Water District.

12.2 Public Hearing and Adoption

City Council held a public hearing to discuss the 2025 Shortage Plan on June 2, 2026 (TO BE CONFIRMED), in conjunction with the City Council meeting.

The public hearing provided an opportunity for all City water users and the public to become familiar with the Shortage Plan and ask questions about the City's planned responses for managing water demands and supply during water shortages. The 2025 Shortage Plan was also made available online on the City's webpage (srcity.org/UWMP) for public inspection for 30 days prior to the public hearing. The 2025 Shortage Plan was adopted by the City Council on June 2, 2026 (TO BE CONFIRMED). A copy of the adopted resolution is provided as Appendix A to the 2025 UWMP.

12.3 Plan Submittal

An electronic copy of the 2025 Shortage Plan was submitted to DWR within 30 days of adoption using the Water Use Efficiency data submittal tool. A copy of the 2025 Shortage Plan was submitted to the California State Library, and an electronic copy was made available to the cities and counties to which the City provides water.

12.4 Public Availability

No later than 30 days after submittal to DWR, the Shortage Plan was made available online on the City's website at srcity.org/UWMP.

12.5 Amending an Adopted Water Shortage Contingency Plan

The City may amend its Shortage Plan and its UWMP jointly or separately. If the City amends the Shortage Plan in the future, the City will follow the notification, public hearing, adoption, and submittal process

described above. In addition to submitting amendments to DWR through the Water Use Efficiency data Portal, copies of amendments or changes to the Shortage Plan will be submitted to the California State Library and any city or county within which the City provides water supplies within 30 days after adoption. In addition, any amendments will be available online on the City's website.

APPENDIX A: 2025 WATER SHORTAGE CONTINGENCY PLAN RESPONSE ACTIONS

Water Shortage Contingency Response Actions

Shortage Level / Response Actions	Stage 1 up to 10% Voluntary	Stage 2 up to 15% Mandatory	Stage 3 up to 20% Mandatory	Stage 4 up to 25% Mandatory	Stage 5 up to 30% Mandatory	Stage 6 up to 40% Mandatory	Stage 7 up to 50% Mandatory	Stage 8 Over 50% Mandatory
Adopt Resolution declaring water shortage emergency and shortage stage and establishing water use prohibitions	Council Action	Council Action	Council Action	Council Action	Council Action	Council Action	Council Action	Council Action
Implement Communication Protocols	✓	✓	✓	✓	✓	✓	✓	✓
Conduct compliance and enforcement as needed	✓	✓	✓	✓	✓	✓	✓	✓
Implement customer service and assistance with Water Use Efficiency programs	✓	✓	✓	✓	✓	✓	✓	✓
Enforce Water Waste Ordinance	✓	✓	✓	✓	✓	✓	✓	✓
Implement Water Waste Patrols (virtual and/or in-person)	✓	✓	✓	✓	✓	✓	✓	✓
Increase staffing resources, as needed (temporary, reassignments, and/or overtime)	✓	✓	✓	✓	✓	✓	✓	✓
Increase overtime budget for staff to help implement the Shortage Plan, as needed	✓	✓	✓	✓	✓	✓	✓	✓
Require shut-off nozzles for garden and utility hoses	✓	✓	✓	✓	✓	✓	✓	✓
Prohibit washing hard surfaces (sidewalks, driveways, patios, etc.) with hose, unless required for public health and safety	✓	✓	✓	✓	✓	✓	✓	✓

Shortage Level / Response Actions	Stage 1 up to 10% Voluntary	Stage 2 up to 15% Mandatory	Stage 3 up to 20% Mandatory	Stage 4 up to 25% Mandatory	Stage 5 up to 30% Mandatory	Stage 6 up to 40% Mandatory	Stage 7 up to 50% Mandatory	Stage 8 Over 50% Mandatory
Limit flushing of mains and hydrants, as applicable and post explanatory signs when flushing mains or hydrants	✓	✓	✓	✓	✓	✓	✓	✓
Enforce Statewide mandatory prohibitions as needed	✓	✓	✓	✓	✓	✓	✓	✓
Adopt Ordinance to authorize Water Shortage Charge		Council Action – 5 %	Council Action 7.5 %	Council Action 10%	Council Action 15%	Council Action 25%	Council Action 35%	Council Action 45%
Require "Water on Request" program for restaurants		✓	✓	✓	✓	✓	✓	✓
Require hotel and lodging industry to incorporate signage and/or messaging regarding washing of linens only upon request		✓	✓	✓	✓	✓	✓	✓
Prohibit power washing with potable water (except for public health and safety and to paint buildings), unless a variance is obtained			✓	✓	✓	✓	✓	✓
Limit hours of irrigation to 7 PM - 9 AM			✓	✓	✓	✓	✓	✓
Prohibit filling and operation of ornamental fountains and water features				✓	✓	✓	✓	✓
Adopt Ordinance to authorize Water Allotments and Excess Use Penalty					Council Action	Council Action	Council Action	Council Action
Assign allocation to each Single Family Residential service					40 GPCD; landscape 2,000 gals/mo (May-Oct)	36 GPCD; landscape 1,000 gals/mo (May-Oct)	32 GPCD	28 GPCD
Offer “Water School”					✓	✓	✓	✓
Assign allocation to each Multi-Family Residential service					40 GPCD; mod. landscape	36 GPCD; mod. landscape	32 GPCD	28 GPCD

Shortage Level / Response Actions	Stage 1 up to 10% Voluntary	Stage 2 up to 15% Mandatory	Stage 3 up to 20% Mandatory	Stage 4 up to 25% Mandatory	Stage 5 up to 30% Mandatory	Stage 6 up to 40% Mandatory	Stage 7 up to 50% Mandatory	Stage 8 Over 50% Mandatory
					budget (May-Oct)	budget (May-Oct)		
Assign allocation to each CII service					85% of previous 12 months usage	80% of previous 12 months usage	75% of previous 12 months usage	70% of previous 12 months usage
Assign allocation to each Irrigation service					40% of ET based water budget	20% of ET based water budget	10% of ET based water budget	No allocation
Assign allocation to each Health and Safety service					95% of previous 12 months	90% of previous 12 months	85% of previous 12 months	80% of previous 12 months
Implement Excess Use Penalty to enforce Water Allocations					**See Table 5-4 in Shortage Plan**	**See Table 5-4 in Shortage Plan**	**See Table 5-4 in Shortage Plan**	**See Table 5-4 in Shortage Plan**
Require new construction offset demand new demand (1:1 ratio)					✓	✓	✓	✓
Prohibit filling new swimming pools and spas					✓	✓	✓	✓
Pool and spa covers must be installed and utilized at commercial, industrial and institutional accounts, as well as Homeowners Association common areas and common interest developments with outdoor pools and spas.					✓	✓	✓	✓
Require use of recycled water for construction dust control if available and filling station is within one mile					✓	✓	✓	✓
Accounts with cooling towers must demonstrate optimization of system(s) to achieve water use efficiency.					✓	✓	✓	✓
Prohibit filling or topping off of existing swimming pools						✓	✓	✓

Shortage Level / Response Actions	Stage 1 up to 10% Voluntary	Stage 2 up to 15% Mandatory	Stage 3 up to 20% Mandatory	Stage 4 up to 25% Mandatory	Stage 5 up to 30% Mandatory	Stage 6 up to 40% Mandatory	Stage 7 up to 50% Mandatory	Stage 8 Over 50% Mandatory
Prohibit installation of water-using landscaping at new construction						✓	✓	✓
Prohibit installation or replanting of water-using landscaping at all sites							✓	✓
Irrigation is limited to maintaining the health of trees and established perennial plantings only.							✓	✓
Prohibit landscape irrigation (reuse of rainwater and graywater allowed)								✓

APPENDIX B: COMMUNICATION PROTOCOLS

Communication Protocols for Water Shortages

Stage 1 Response Actions	Stage 1 Communication Actions
• City Council adopts resolution declaring Stage 1 water shortage emergency, requesting 10 percent voluntary conservation, prohibiting water waste, reducing non-essential uses, and authorizing implementation of Shortage Plan, and triggering Stage 1 prohibitions and restrictions and State mandated prohibitions if any • Launch/sustain public information campaign • Implement Water Waste Patrols • Implement compliance and enforcement procedures	Implement communication plan to keep stakeholders informed: • State regulators and local officials • Sonoma Water and local water providers • Customers, general public, and interested parties Messages (in English and Spanish): • Stage 1 water shortage level in effect • Reduction target is 10 percent voluntary, non-allocation-based, community-wide effort • New prohibitions and restrictions on end uses are in effect (describe all) • Eliminate water waste (requirements of ordinance and how to report water waste) • Highlight Water Use Efficiency programs (include contacts: phone number, email, website URL) • Inform State regulators, local officials, Sonoma Water, and local water providers via meetings, email, phone, US postal service, online portals Inform customers, general public, and interested parties via: • Bill inserts and envelope messages (customers) • Letters and other direct mail marketing (such as postcards) to customer sectors and stakeholders (e.g., property managers and landscape professionals) • Media releases • Social media posts • Updated website content • Santa Rosa's City Connections newsletter and- news alerts • Presentations at Board of Public Utilities (BPU) and City Council meetings • Presentations at meetings of regional policy makers and governing bodies • Presentations to civic groups, nonprofits, businesses, large employers, schools • Signs applied to City vehicles and/or banners posted in downtown core • Public information booths at local fairs, festivals, events • Sonoma Marin Saving Water Partnership public information campaign • Ad buys: Radio, print, digital, and social media

Stage 2 Response Actions	Stage 2 Communication Actions

• Actions from previous stage in effect
• City Council adopts resolution/ordinance declaring Stage 2 water shortage emergency, mandating 15 percent non-allocation-based water reduction community-wide for all user classes, and authorizing implementation of Shortage Plan and Water Shortage Charge (5 percent), and triggering restrictions and prohibitions for Stages 1-2 and State mandated prohibitions if any
• Launch/expand public information campaign
• Implement Water Shortage Charge (5 percent)
	Implement/expand communication plan to inform/update:
	• State regulators and local officials
	• Sonoma Water and local water providers
	• Customers, general public, and interested parties
	Messages (in English and Spanish):
	• Same as previous stage with these modifications and/or additions
	  ○ Stage 2 water shortage level
	  ○ Reduction target is 15 percent mandatory, non-allocation-based, community-wide
	  ○ Additional prohibitions and restrictions on end uses are in effect (describe all)
	  ○ Water Shortage Charge is in effect (5 percent of customer usage rate)
	Inform State Regulators, local officials, Sonoma Water, and local water providers via:
	• Same as previous stage
	Inform customers, general public, and interested parties via:
	• Same as previous stage plus:
	  ○ Increase ad buys: Radio, print, digital, and social media
	  ○ Send letter to customers to inform them about Stage 2 Water Shortage Charge and Stage 1-2 prohibitions and restrictions. Provide information about Water Use Efficiency programs and technical assistance. Request updated information in preparation for water allocations (Stage 5 or higher)
	  ○ If Stage 3 or higher is anticipated, reach out to landscape and irrigation industry to inform them of potential need to limit irrigation hours

Stage 3 Response Actions	Stage 3 Communication Actions

• Actions from previous stage in effect
• City Council adopts resolution/ordinance declaring Stage 3 water shortage emergency, mandating 20 percent non-allocation-based water reduction community-wide for all user classes, and authorizing implementation of Shortage Plan and Water Shortage Charge (7.5 percent), and triggering restrictions and prohibitions for Stages 1-3 and State mandated prohibitions if any
• Launch/expand public information campaign
• Implement Water Shortage Charge (7.5 percent)
	Implement/expand communication plan to inform/update:
	• State regulators and local officials
	• Sonoma Water and local water providers
	• Customers, general public, and interested parties
	Messages (in English and Spanish):
	• Same as previous stages with these modifications and/or additions
	  ○ Stage 3 water shortage level
	  ○ Reduction target is 20 percent mandatory, non-allocation-based, community-wide
	  ○ Additional prohibitions and restrictions on end uses are in effect (describe all)
	  ○ Water Shortage Charge is in effect (7.5 percent of customer usage rate)
	Inform State Regulators, local officials, Sonoma Water, and local water providers via:
	• Same as previous stages
	Inform customers, general public, and interested parties via:
	• Same as previous stages plus:
	  ○ Increase frequency and scope of ad buys
	  ○ Send letter to customers to inform them about Stage 3 Water Shortage Charge and Stage 1-3 prohibitions and restrictions. Provide information about Water Use Efficiency programs and technical assistance. Request updated information in preparation for water allocations (Stage 5 or higher)
	  ○ Reach out to landscape and irrigation industry to inform them of irrigation hours. If Stage 4 or higher is anticipated, inform them about limits on irrigation and landscape installation that would be triggered.
	  ○ Deliver more frequent presentations at BPU meetings and City Council meetings

Stage 4 Response Actions	Stage 4 Communication Actions

• Actions from previous stage in effect
• City Council adopts resolution/ordinance declaring Stage 4 water shortage emergency, mandating 25 percent non-allocation-based water reduction community-wide for all user classes, and authorizing implementation of Shortage Plan and Water Shortage Charge (10 percent), and triggering restrictions and prohibitions for Stages 1-4 and State mandated prohibitions if any
• Launch/expand public information campaign
• Implement Water Shortage Charge (10 percent)
	Implement/expand communication plan to inform/update:
	• State regulators and local officials
	• Sonoma Water and local water providers
	• Customers, general public, and interested parties
	Messages (in English and Spanish):
	• Same as previous stages with these modifications and/or additions
	• Stage 4 water shortage level
	• Reduction target is 25 percent mandatory, non-allocation-based, community-wide
	• Additional prohibitions and restrictions on end uses are in effect (describe all)
	• Water Shortage Charge is in effect (10 percent of customer usage rate)
	Inform State Regulators, local officials, Sonoma Water, and local water providers via:
	• Same as previous stages
	Inform customers, general public, and interested parties:
	• Same as previous stages plus:
	  ○ Increase frequency and scope of ad buys
	  ○ Send letter to customers to inform them about Stage 4 Water Shortage Charge and Stage 1-4 prohibitions and restrictions. Provide information about Water Use Efficiency programs and technical assistance. Request updated information in preparation for water allocations (Stage 5 or higher)
	  ○ Reach out to landscape and irrigation industry to inform them of current restrictions (Stage 4). If Stage 5 or higher is anticipated, inform them about limits on irrigation and landscape installation and about landscape related water allocations for all customer sectors in Stages 58
	  ○ Work with land use planners, developers, builders, general contractors, etc., to prepare for potential limits on new demand (offset program for Stages 5-8) Also inform them of other limits/restrictions related to landscape irrigation and installation (Stages 3-8) and operation and filling of pools/spas (Stages 4-8)

Stage 5 Response Actions	Stage 5 Communication Actions

• Actions from previous stage in effect
• City Council adopts resolution/ordinance declaring Stage 5 water shortage emergency, mandating Stage 5 allocation-based water reductions for each service, and authorizing implementation of Shortage Plan, Water Shortage Charge (15 percent), and Stage 5 Excess Use Penalty structure, and triggering restrictions and prohibitions for Stages 1-5 and State mandated prohibitions if any
• Launch/expand public information campaign
• Implement Water Shortage Charge (15 percent)
• Implement Stage 5 water allocations
• Implement Stage 5 Excess Use Penalty for water use over allocation
	Implement/expand communication plan to inform/update:
	• State regulators and local officials
	• Sonoma Water and local water providers
	• Customers, general public, and interested parties
	Messages (in English and Spanish):
	• Same as previous stages with these modifications and/or additions
	  ○ Stage 5 water shortage level
	  ○ Reduction is mandatory and based on Stage 5 allocations assigned to each service
	  ○ Stage 5 Excess Use Penalty structure for exceeding water allocation
	  ○ Water Shortage Charge is in effect (15 percent of customer usage rate)
	  ○ Additional prohibitions and restrictions on end uses are in effect
	  ○ New construction must offset demand by ratio of 1 to 1
	Inform State Regulators, local officials, Sonoma Water, and local water providers via:
	• Same as previous stages
	Inform customers, general public, and interested parties via:
	• Same as previous stages plus:
	  ○ Increase frequency and scope of ad buys
	  ○ Send letter to customers to inform them about Stage 5 Water Shortage Charge, Water Allocations, and Stage 1-5 prohibitions and restrictions. Provide information about Water Use Efficiency programs and technical assistance and include information about Excess Use Penalty and appeal/exemption processes
	  ○ Reach out to landscape and irrigation industry to inform them of current restrictions (Stage 5). If Stage 6 or higher is anticipated, inform them about limits on irrigation and landscape installation about landscape related water allocations for all customer sectors in Stages 6-8
	  ○ Work with land use planners, developers, builders, general contractors, etc., to implement the water demand offset program.

Stage 6 Response Actions	Stage 6 Communication Actions

• Actions from previous stages in effect
• City Council adopts resolution/ordinance declaring Stage 6 water shortage emergency, mandating Stage 6 allocation-based water reductions for each service, authorizing implementation of Shortage Plan, Water Shortage Charge (25 percent), and Stage 6 Excess Use Penalty structure, and triggering restrictions and prohibitions for Stages 1-6 and State mandated prohibitions if any
• Launch/sustain public information campaign
• Implement Water Shortage Charge (25 percent)
• Implement Stage 6 water allocations
• Implement Stage 6 Excess Use Penalty structure for water use over allocation
	Implement/expand communication plan to inform/update
	• State regulators and local officials
	• Sonoma Water and local water providers
	• Customers, general public, and interested parties
	Messages (in English and Spanish):
	• Same as previous stages with these modifications and/or additions
	  ○ Stage 6 water shortage level
	  ○ Reduction is mandatory and based on Stage 6 allocations assigned to each service
	  ○ Stage 6 Excess Use Penalty structure for exceeding water allocation
	  ○ Water Shortage Charge is in effect (25 percent of customer usage rate)
	  ○ Additional prohibitions and restrictions on end uses are in effect
	Inform State Regulators, local officials, Sonoma Water, and local water providers via:
	• Same as previous stages
	Inform customers, general public, and interested parties via:
	• Same as previous stages plus:
	  ○ Increase frequency and scope of ad buys
	  ○ Send letter to customers to inform them about Stage 6 Water Shortage Charge, Water Allocations, and Stage 1-6 prohibitions and restrictions. Provide information about Water Use Efficiency programs and technical assistance and include information about Excess Use Penalty and appeal/exemption processes
	  ○ Reach out to landscape and irrigation industry to inform them of current restrictions (Stage 6). If Stage 7 or 8 is anticipated, inform them about limits on irrigation and landscape installation and water allocations for all customer sectors

Stage 7 Response Actions	Stage 7 Communication Actions

• Actions from previous stages in effect
• City Council adopts resolution/ordinance declaring Stage 7 water shortage emergency, mandating Stage 7 allocation-based water reductions for each service, authorizing implementation of Shortage Plan, Water Shortage Charge (35 percent), and Stage 6 Excess Use Penalty structure, and triggering restrictions and prohibitions for Stages 1-7 and State mandated prohibitions if any
• Launch/sustain public information campaign
• Implement Water Shortage Charge (35 percent)
• Implement Stage 7 water allocations
• Implement Stage 7 Excess Use Penalty for water use over allocation
	Implement/expand communication plan to inform/update
	• State regulators and local officials
	• Sonoma Water and local water providers
	• Customers, general public, and interested parties
	Messages (in English and Spanish):
	• Same as previous stages with these modifications and/or additions
	  ○ Stage 7 water shortage level
	  ○ Reduction is mandatory and based on Stage 7 allocations assigned to each service
	  ○ Stage 7 Excess Use Penalty structure for exceeding water allocation
	  ○ Water Shortage Charge is in effect (35 percent of customer usage rate)
	  ○ Additional prohibitions and restrictions on end uses are in effect
	Inform State Regulators, local officials, Sonoma Water, and local water providers via:
	• Same as previous stages
	Inform customers, general public, and interested parties via:
	• Same as previous stages plus:
	  ○ Increase frequency and scope of ad buys
	  ○ Send letter to customers to inform them about Stage 7 Water Shortage Charge, Water Allocations, and Stage 1-7 prohibitions and restrictions. Provide information about Water Use Efficiency programs and technical assistance and include information about Excess Use Penalty and appeal/exemption processes
	  ○ Reach out to landscape and irrigation industry to inform them of current (Stage 7). If Stage 8 anticipated, inform them about limits on irrigation and landscape installation and water allocations for all customer sectors in Stage 8

Stage 8 Response Actions	Stage 8 Communication Actions

• Actions from previous stages in effect
• City Council adopts resolution/ordinance declaring Stage 8 water shortage emergency, mandating Stage 8 allocation-based water reductions for each service, authorizing implementation of Shortage Plan, Water Shortage Charge (45 percent), and Stage 7 Excess Use Penalty structure, and triggering restrictions and prohibitions for Stages 1-8 and State mandated prohibitions if any
• Launch/sustain public information campaign
• Implement Water Shortage Charge (45 percent)
• Implement Stage 8 water allocations
	Implement/expand communication plan to inform/update
	• State regulators and local officials
	• Sonoma Water and local water providers
	• Customers, general public, and interested parties
	Messages (in English and Spanish):
	• Same as previous stages with these modifications and/or additions
	  ○ Stage 8 water shortage level
	  ○ Reduction is mandatory and based on Stage 8 allocations assigned to each service
	  ○ Stage 8 Excess Use Penalty structure for exceeding water allocation
	  ○ Water Shortage Charge is in effect (45 percent of customer usage rate)
	  ○ Additional prohibitions and restrictions on end uses are in effect (describe all)
	Inform State Regulators, local officials, Sonoma Water, and local water providers via:
	• Same as previous stages
	Inform customers, general public, and interested parties via:
	• Same as previous stages plus
	  ○ Increase frequency and scope of ad buys:
	  ○ Send letter to customers to inform them about Stage 8 Water Shortage Charge, Water Allocations, and Stage 1-8 prohibitions and restrictions. Provide information about Water Use Efficiency programs and technical assistance and include information about Excess Use Penalty and appeals/exemption processes
	  ○ Reach out to landscape and irrigation industry to inform them of Stage 8 limits on irrigation and landscape installation

APPENDIX C: SAMPLE RESOLUTION OF THE COUNCIL OF THE CITY OF SANTA ROSA DECLARING A WATER SHORTAGE EMERGENCY

RESOLUTION OF THE COUNCIL OF THE CITY OF SANTA ROSA DECLARING A WATER SHORTAGE EMERGENCY, IMPLEMENTING STAGE __ OF THE CITY'S WATER SHORTAGE CONTINGENCY, CALLING FOR A _____% REDUCTION IN COMMUNITY-WIDE WATER USE, AND AUTHORIZING USE OF THE WATER DEPARTMENT'S UNDESIGNATED AND CATASTROPHIC RESERVES

WHEREAS, the City of Santa Rosa is a City empowered by the City Charter to provide water service within certain boundaries; and

WHEREAS the Sonoma County Water Agency (Sonoma Water) is the wholesaler of water to the City of Santa Rosa; and

WHEREAS, due to (current condition – drought, contamination, etc.), water supply conditions indicate that a ____% reduction in demand is required to ensure adequate supply in 20__; and

WHEREAS, Sonoma Water has reduced delivery to the City and all prime contractors by ____%; and

WHEREAS, the City of Santa Rosa has the authority, by City Charter, Sections 3 and 25(b) and City Code, Section 14-04.020 Administration and regulations authority, and the responsibility to adopt water demand reduction measures within its area of service; and

WHEREAS, the City of Santa Rosa has the authority through the activation of its Water Shortage Contingency Plan to employ the Undesignated Reserve and the Catastrophic Reserve during a Water Shortage Emergency; and

WHEREAS, the Water Department staff is recommending implementation of Stage __ of the City's Water Shortage Contingency Plan; and

WHEREAS, on _____ the Council of the City of Santa Rosa adopt a resolution declaring a water shortage emergency, directing staff to implement a program of demand management as defined by Stage ___ of the City's Water Shortage Contingency Plan to realize community-wide water reduction of ___% and directing staff to utilize the Undesignated and Catastrophic Reserves to compensate for loss of revenue due to reduced water sales.

NOW, THEREFORE, BE IT RESOLVED that the Council of the City of Santa Rosa declares a water shortage emergency and directs staff to implement a program of demand management as defined by Stage __ of the City's Water Shortage Contingency Plan to realize community-wide water reduction of ____%.

BE IT FURTHER RESOLVED that the City Council directs staff to utilize the Undesignated Reserve and Catastrophic Reserve to compensate for loss of revenue due to reduced water sales.

IN COUNCIL DULY PASSED THIS _____ day of _____, 2026__

AYES:

NOES:

ABSENT:

ABSTAIN:

ATTEST: _____ APPROVED: _____

City Clerk

Mayor

APPROVED AS TO FORM:

_____

City Attorney

SAMPLE

APPENDIX F: DEPARTMENT OF WATER RESOURCES URBAN WATER MANAGEMENT PLAN CHECKLIST

Retail (x = required)	Wholesale (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
x	x	1	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and overview	n/a	
x	x	1	Chapter 1	10630.5	Each plan shall include a simple description of the Supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a Supplier may also choose to include a simple description at the beginning of each chapter.	Plan preparation	n/a	Executive Summary
x	x	2.1	Section 2.1	10620(b)	Every person that becomes a Supplier shall adopt UWMP within one year after it has become a Supplier.	Plan preparation	n/a	2.1
x	n/a	2.5	Section 2.5	10644	Supplier shall report the Public Water Systems number, volume of delivered water, and number of connections that are included in this UWMP.	Plan preparation	2-1	2.1
x	x	2.5	Section 2.5	10644	Supplier shall report if this UWMP is an individual UWMP and whether the Supplier belongs to a regional UWMP or regional alliance.	Plan preparation	2-2	2.3
x	x	2.5	Section 2.5	10644	Supplier shall report whether the data is in fiscal or calendar years and the units of measure used for reporting water volumes.	Plan preparation	2-3	2.4
x	x	2.4	Section 2.4	10642	Provide supporting documentation that the Supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan preparation	n/a	2.5
x	x	2.4	Section 2.4.2	10620(d)(3)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other Suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan preparation	n/a	2.5.2
x	n/a	2.4	Section 2.4.1	10631(h)	Retail Suppliers will include documentation that they have provided their Wholesale Supplier(s)—if any—with water use projections from that source.	Plan preparation	2-4 R	2.5.1
n/a	x	2.4	Section 2.4.1	10631(h)	Wholesale Suppliers will provide their Suppliers with identification and quantification of the existing and planned sources of water available from the Wholesale Supplier to the Supplier during various water year types.	Plan preparation	2-4 W	2.5.1
x	x	3	Chapter 3.0	10631(a)	Describe the Supplier service area.	System description	n/a	3.1 to 3.3
x	x	3.3	Section 3.3	10631(a)	Describe the climate of the Supplier's service area.	System description	n/a	3.4
x	x	3.4	Section 3.4.1	10631(a)	Provide the current and projected service area populations for 2030, 2035, 2040, 2045 and optionally 2050.	System description	3-1	3.5.1
x	x	3.4	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the Supplier's water management planning.	System description	n/a	3.5.2
x	x	3.5	Section 3.5	10631(a)	Describe the land uses within the service area… include the current and projected land uses within the existing or anticipated service area affecting the Supplier's water management planning. Describe the land uses within the service area.	System description and baselines	n/a	3.6
x	Optional	4.2	Sections 4.2.3 and 4.2.4	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System water use	4-1 and 4-2	4.3.3, 4.3.5, and 4.3.6
x	Optional	4.3	Section 4.3.1	10631(d)(3)(A)	Report the distribution system water loss for each of the five years preceding the plan update.	System water use	4-5	4.3.4
x	n/a	4.3	Section 4.3.2	10631(d)(3)(C)	Retail Suppliers shall provide data to show the distribution loss standards were met.	System water use	4-6	4.3.4
x	n/a	4.2	Section 4.2.5.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the Supplier.	System water use	4-3	4.4
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws.	System water use	4-3	4.5
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System water use	4-3	4.5
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(B)(ii)	To the extent that a Supplier reports the information described in subparagraph (A), an urban water Supplier shall… Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.	System water use	4-3	4.5
x	x	4.2	Section 4.2.5.6	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System water use	n/a	4.6
n/a	x	5.1	Section 5.1	10608.36	Wholesale Suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their Retail Suppliers achieve targeted water use reductions.	Baselines and targets	n/a	Not Applicable
x	n/a	5.2	Section 5.2	10608.4	Retail Suppliers shall report on their compliance in meeting their water use targets. Reporting requirements will vary depending on whether the Supplier: - Was considered an urban retail water supplier in 2020, - Met its 2020 target in 2020, or - Was part of a merger or consolidation since 2020. Chapter 5 Subsections 5.2.1, 5.2.2, and 5.2.3 address each of these situations.	Baselines and targets	5-1	Chapter 5
x	x	6.1	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System supplies	n/a	6.1 and 6.2
x	x	6.1	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, including changes in supply due to climate change.	System supplies	n/a	6.9
x	x	6.2	Section 6.2.2	10631(b)(4)(C)	Indicate whether groundwater is an existing or planned source of water available to the Supplier. If groundwater is identified as an existing or planned source of water… (include) a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the Supplier for the past five years.	Water supplies and recycled water	6-1	6.2
x	x	6.2	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the Supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System supplies	n/a	6.2.2
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System supplies	n/a	6.2.1
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the Supplier has the legal right to pump.	System supplies	n/a	6.2.3
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	For unadjudicated basins… (include) information as to whether DWR has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin.	Water supplies and recycled water	n/a	6.2.2
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	For unadjudicated basins… describe efforts by the Supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	Water supplies and recycled water	n/a	6.2.2
x	x	6.2	Section 6.2.2.	10631(b)(4)(C)	If groundwater is identified as an existing or planned source of water… (include) a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the Supplier for the past five years.	System supplies	n/a	6.2.4
x	x	6.2	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System supplies	6-9	6.2.5
x	x	6.1	Section 6.1	10631(b)	Identify and quantify the existing and planned sources of water available for 2025, 2030, 2035, 2040, 2045 and optionally 2050.	System supplies	6-8 and 6-9	6.8
x	x	6.2	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System supplies	n/a	6.6
x	n/a	6.2	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the Supplier's service area with quantified amount of collection and treatment and the disposal methods.	System supplies (recycled water)	6-2	6.3
x	x	6.2	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System supplies (recycled water)	6-3	6.3.1
x	x	6.2	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the Supplier's service area.	System supplies (recycled water)	6-4	6.3.2
x	x	6.2	Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System supplies (recycled water)	6-4	6.3.3
x	x	6.2	Section 6.2.5	10633(e)	Describe the projected use of recycled water within the Supplier's service area at the end of 5, 10, 15, and 20 years, and describe the actual use of recycled water in comparison to uses previously projected.	System supplies (recycled water)	6-4 and 6-5	6.3.3
x	x	6.2	Section 6.2.5	10633(f)	Describe the actions that may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System supplies (recycled water)	6-6	6.3.3
x	x	6.2	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the Supplier's service area.	System supplies (recycled water)	n/a	6.3.3
x	x	6.2	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System supplies	6-7	6.5
x	x	6.2	Section 6.2.10	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water Supplier to address water supply reliability in average, single-dry, and for a period of drought lasting five consecutive water years.	System supplies	6-7	6.8
x	x	6.3	Section 6.3 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a Supplier can readily obtain.	System suppliers, energy intensity	O-1A, O-1B, O-1C, and O-2	6.1
x		7.1	Section 7.1	10634	Provide information on the quality of existing sources of water available to the Supplier and the manner in which water quality affects water management strategies and supply reliability.	Water supply reliability assessment	n/a	7.1
x	x	7.2	Section 7.2	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the Supplier with the total projected water use over the next 20 years.	Water supply reliability assessment	7-2, 7-3, and 7-4	7.2
x	x	7.2	Section 7.2.3	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water supply reliability assessment	n/a	7.2.5
x	x	7.3	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water supply reliability assessment	n/a	7.3
x	x	7.3	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive years.	Water supply reliability assessment	n/a	7.3.1
x	x	7.3	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water supply reliability assessment	n/a	7.2.1
x	x	7.3	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the Supplier with the total projected water use for the drought period.	Water supply reliability assessment	7-5	7.2.1
x	x	7.3	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water supply reliability assessment	n/a	6.9, 7.1
x	x	8	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water shortage contingency planning	n/a	Appendix F
x	x	8	Chapter 8	10632(a)(1)	Provide an analysis of water supply reliability (from Guidebook Chapter 7) in the WSCP.	Water shortage contingency planning	n/a	Appendix J, Section 2
x	x	8.2	Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the Supplier will use each year to determine its water reliability.	Water shortage contingency planning	n/a	Appendix J, Section 3
x	x	8.2	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the Supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water shortage contingency planning	n/a	Appendix J, Section 3
x	x	8.3	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10%, 20%, 30%, 40%, 50% shortage, and greater than 50% shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water shortage contingency planning	n/a	Appendix J, Section 4
x	x	8.3	Section 8.3	10632(a)(3)(B)	Suppliers with an existing WSCP that uses different water shortage levels must cross reference their categories with the six standard categories.	Water shortage contingency planning	8-1	Appendix J, Section 4, Table 4-2
x	x	8.4	Section 8.4	10632(a)(4)(A)	Suppliers with WSCPs that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water shortage contingency planning	8-2	Appendix J, Section 5.1
x	x	8.4	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water shortage contingency planning	8-3	Appendix J, Section 5.2
x	x	8.4	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water shortage contingency planning	8-2	Appendix J, Section 5.2.5
x	x	8.4	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to State-mandated prohibitions are appropriate to local conditions.	Water shortage contingency planning	Table 8-3	Appendix J, Section 5.2.3
x	x	8.4	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water shortage contingency planning	8-2 and 8-3	Appendix J, Section 5.3
x	x	8.4	Section 8.4.6	10632.5	The UWMP shall include a seismic risk assessment and mitigation plan.	Water shortage contingency plan	n/a	Appendix J, Section 2.4.3
x	x	8.5	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water shortage contingency planning	n/a	Appendix J, Section 5.2.1
x	x	8.5	Section 8.5	10632(a)(5)(B), 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water shortage contingency planning	n/a	Appendix J, Section 6
x	n/a	8.6	Section 8.6	10632(a)(6)	Retail Supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water shortage contingency planning	n/a	Appendix J, Section 7
x	x	8.7	Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the Supplier to enforce shortage response actions.	Water shortage contingency planning	n/a	Appendix J, Section 8
x	x	8.7	Section 8.7	10632(a)(7)(B)	Provide a statement that the Supplier will declare a water shortage emergency per Water Code *Chapter 3, Water Shortage Emergencies*.	Water shortage contingency planning	n/a	Appendix J, Section 3.1
x	x	8.7	Section 8.7	10632(a)(7)(C)	Provide a statement that the Supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water shortage contingency planning	n/a	Appendix J, Section 3.1
x	x	8.8	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water shortage contingency planning	n/a	Appendix J, Section 9.1
x	x	8.8	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water shortage contingency planning	n/a	Appendix J, Section 9
x	n/a	8.8	Section 8.8	10632(a)(8)(C)	Retail Suppliers must describe the cost of compliance with Water Code Chapter 3.3, *Excessive Residential Water Use During Drought*.	Water shortage contingency planning	n/a	Appendix J, Section 9
x	n/a	8.9	Section 8.9	10632(a)(9)	Retail Suppliers must describe the monitoring and reporting requirements and procedures that ensure appropriate data are collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water shortage contingency planning	n/a	Appendix J, Section 10
x	x	8.10	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the WSCP to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water shortage contingency planning	n/a	Appendix J, Section 10

x	n/a	8.11	Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water shortage contingency planning	n/a	Appendix J, Section 5.2.3.2
x	x	8.12	Section 8.12	10632(c)	Make available the WSCP to customers and any city or county where it provides water within 30 days after adoption of the plan.	Water shortage contingency planning	n/a	Appendix J, Section 12.4
x	n/a	9.1	Sections 9.1	10631(e)(1)	Retail Suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand management measures	n/a	9.2
n/a	x	9.2	Sections 9.2	10631(e)(2)	Wholesale Suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and Supplier assistance program.	Demand management measures	n/a	Not Applicable
x	n/a	10	Chapter 10	10608.26(a)	Retail Suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan adoption, submittal, and implementation	n/a	10.3
x	x	10.2	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the Supplier provides water that the Supplier will be reviewing the UWMP and considering amendments or changes to the plan.	Plan adoption, submittal, and implementation	10-1	10.2.1
x	x	10.4	Section 10.4	10621(f)	Each urban water Supplier shall update and submit its 2025 plan to DWR by July 1, 2026.	Plan adoption, submittal, and implementation	n/a	10.4
x	x	10.2	Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the Supplier made the UWMP and WSCP available for public inspection, published notice of the public hearing, and held a public hearing about the UWMP and WSCP.	Plan adoption, submittal, and implementation	n/a	10.2
x	x	10.2	Section 10.2.2	10642	The Supplier is to provide the time and place of the hearing to any city or county within which the Supplier provides water.	Plan adoption, submittal, and implementation	10-1	10.2.1
x	x	10.3	Section 10.3.2	10642	Provide supporting documentation that the UWMP and WSCP has been adopted as prepared or modified.	Plan adoption, submittal, and implementation	n/a	10.3
x	x	10.4	Section 10.4	10644(a)	Provide supporting documentation that the Supplier has submitted their UWMP to the California State Library.	Plan adoption, submittal, and implementation	n/a	10.4
x	x	10.4	Section 10.4	10644(a)(1)	Provide supporting documentation that the Supplier has submitted their UWMP to any city or county within which the Supplier provides water no later than 30 days after adoption.	Plan adoption, submittal, and implementation	n/a	10.4
x	x	10.4	Sections 10.4.1 and 10.4.2	10644(a)(2)	The UWMP, or amendments to the UWMP, submitted to DWR shall be submitted electronically.	Plan adoption, submittal, and implementation	n/a	10.4
x	x	10.7	Section 10.7.2	10644(b)	If revised, submit a copy of the WSCP to DWR within 30 days of adoption.	Plan adoption, submittal, and implementation	n/a	10.6
x	x	10.5	Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its UWMP with DWR, the Supplier has or will make the plan available for public review during normal business hours.	Plan adoption, submittal, and implementation	n/a	10.5
x	x	10.5	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its WSCP with DWR, the Supplier has or will make the plan available for public review during normal business hours.	Plan adoption, submittal, and implementation	n/a	10.5
x	x	10.6	Section 10.6	10621(c)	If Supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan adoption, submittal, and implementation	n/a	Not Applicable