2025 URBAN WATER MANAGEMENT PLAN

Public Review Draft

CITY OF ROSEVILLE CALIFORNIA

City of Roseville
2025
Urban Water Management Plan

Public Review Draft

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Prepared by Water Works Engineers, LLC
Colleen Boak, PE
Brandon Kennedy

Checked by:
Tim Durbin, PE

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Abbreviations

Acre(s)	ac
Acre-Feet	AF
Acre-Feet Per Year	AF/yr
Advanced Metering Infrastructure	AMI
American Community Survey	ACS
American River Basin	Basin
American River Basin Study	ARBS or Study
Aquifer Storage and Recovery	ASR
Average Dry Weather Flow	ADWF
Barton Road Water Treatment Plant	BRWTP
California Department of Finance	CDoF
California Green Building Standards Code	CALGreen
California State Groundwater Elevation Monitoring Program	CASGEM
California Water Code	CWC
California-American Water Company	Cal-Am
Central Valley Project Municipal and Industrial Water Shortage Policy	CVP M&I WSP
Citrus Heights Water District	CHWD
City of Roseville	COR or Roseville
City of Roseville Water Utility	City
Compressed Natural Gas	CNG
Cubic Feet Per Second	cfs
Degrees Fahrenheit	°F
Department of Water Resources	DWR
Drought Risk Assessment	DRA
Dwelling Unit	DU
Environmental Impact Statement	EIS
Environmental Utilities	EU
Equivalent Dwelling Unit	EDU
Gallons Per Day per Dwelling Unit	Gpd/DU
Gallons Per Minute	gpm
Groundwater Management Plan	GWMP
Groundwater Sustainability Agency	GSA
Groundwater Sustainability Plan	GSP
Hot Scenarios	HD, HW
Maximum Contaminant Level	MCL
Memorandum Of Understanding	MOU
Middle Fork Project	MFP
Million Gallon(s)	MG
Million Gallons Per Day	MGD
Model Water Efficient Landscape Ordinance	MWELO
Municipal and Industrial	M&I

National Pollutant Discharge Elimination System	NPDES
Operations Criteria and Plan	OCAP
Parts Per Million	ppm
Potential Evapotranspiration	PET
Placer County Water Agency	PCWA
Pounds Per Square Inch	psi
Regional Drought Contingency Plan/ Regional Water Reliability Plan	RWRP
Sacramento Suburban Water District	SSWD
San Juan Water District	SJWD
Senate Bill X7-7	SB X7-7
South Placer Municipal Utilities District	SPMUD
South Placer Wastewater Authority	SPWA
State of California Legislature	Legislature
State Water Project	SWP
Sustainable Groundwater Management Act	SGMA
Thousand Acre-Feet	TAF
United States Bureau of Reclamation	USBR
United States Bureau of Reclamation	USBR
Urban Water Management Plan	UWMP
Urban Water Management Plan Guidebook 2025	Guidebook
Urban Water Retail Supplier	Supplier
Warm Scenarios	WD, WW
Wastewater Treatment Plant	WWTP
Water Demand Tracking Tool	Tool
Water Forum Agreement	WFA
Water Shortage Contingency Plan	WSCP
Water Storage Investment Program	WSIP
Water Treatment Plant	WTP
Western Placer Groundwater Sustainability Agency	WPGSA
Water Use Efficiency	WUE

Executive Summary

ES. 1 Introduction

An Urban Water Management Plan (UWMP) is the legal and technical water management foundation for suppliers throughout California. A UWMP combines information from various sources that inform water supply and demand such as projects pertaining to local land use planning, regional water supply, infrastructure, and demand management. The City of Roseville Water Utility (City) updates its UWMP every five years, as required by law. Each UWMP update addresses all requirements pertaining to urban retail water suppliers in accordance with the Urban Water Management Planning Act and the Water Conservation Act of 2009, also referred to as Senate Bill X7-7 (SB X7-7). Information contained in this 2025 UWMP includes the components listed in the following section.

ES. 2 Plan Components

The plan consists of the following components:

- **Chapter 1:** The basis for preparing a plan and the new requirements.
- **Chapter 2:** Summary of how the plan is prepared and coordination with the public and other local and regional authorities.
- **Chapter 3:** A description of the City's treatment facilities and distribution infrastructure, as well as a description of the population and area served by the City.
- **Chapter 4:** Quantification of water use for the 5-years preceding the plan update and water use projections for a 20-year planning horizon.
- **Chapter 5:** Confirmation of compliance with SB X7-7.
- **Chapter 6:** Description of existing and planned water supplies and water supply management.
- **Chapter 7:** A drought risk assessment (DRA), which analyzes water supplies and demands in a single year or multiple years of a water shortage.
- **Chapter 8**: The Water Shortage Contingency Plan (WSCP), which outlines the process that the City will execute in the event of a water shortage.
- **Chapter 9:** Demand measures that the City integrates and plans to integrate into its regular operations to address increasing demands.
- **Chapter 10:** Record of the process by which the UWMP was adopted, submitted, and implemented with the intention of making the plan widely available to the City's customers and the public.

ES. 3 Basis for Plan Preparation and Coordination

Urban water retail suppliers (suppliers) who either deliver 3,000 acre-feet (AF) or more of water or have over 3,000 service connections are required to submit a UWMP. In 2025 the City had 53,148 service connections and supplied a total of 31,893 AF to its customers and therefore is required to prepare and submit an UWMP.

In preparation of the UWMP the City coordinated with the U.S. Bureau of Reclamation (USBR) and Placer County Water Agency (PCWA) both of which supply water to the city on a wholesale basis. The City also sought involvement from the public and other local water agencies. Neighboring water retail suppliers and the community were informed of a public hearing to be held on June 17, 2026. In this public hearing the plan will be

presented, and attendees encouraged to share questions and concerns. Following the public hearing, an adoption hearing for the UWMP will be held on June 17, 2026, during which City Council will consider adopting the UWMP.

ES. 4 System and Supply Description

Raw water from Folsom Reservoir, the City's primary water source, is conveyed to the City's water treatment plant located in the Granite Bay area. Potable water is distributed through the City's approximately 700 miles of water mains to customers. Other water facilities that the City maintains include potable water storage tanks, pump stations, interties to exchange water with other water agencies, and groundwater wells.

The City receives its contract supplies purchased from USBR and PCWA through Folsom Reservoir. Since the last UWMP update in 2020, the City has executed an update to the contract with PCWA to increase overall water supply resilience. Over the next ten years, an additional 10,000 AF of PCWA supply will be secured in increments through the updated contract. This outlook for increased supply is described in further detail in Chapter 6.

The City is currently engaged in an update to the Water Forum Agreement which applies some limitations to available supplies depending on the hydrologic water year type. The assumption in this UWMP is that the final Water Forum Agreement supply limitations will be applied to the City's increased available contract supplies (see changes to PCWA contract supply noted above) in the same way with no additional supply limitation imposed. A new obligation associated with the American River Terms for Ecosystem Support and Infrastructure Assistance Needs (ARTESIAN) Project Agreement will create potential limitations of 4,460 AF to available surface water supplies in dry or critically dry years, carrying an obligation to offset surface water with groundwater in "call" years under the agreement. If contract supply conditions change after the 2025 UWMP is finalized, the City may choose to update relevant sections of the Plan. These limiting conditions have been modelled as part of the Drought Risk Analysis in Chapter 7.

A previous supply contract with San Juan Water District (SJWD) has been terminated in the time since the 2020 UWMP; however, existing interties with SJWD will remain physically intact in case of supply emergencies. The 4,000 AF of supply previously contracted with SJWD has been incorporated into the updated contract with PCWA raising the total raw water supply quantity from 30,000 AF to 34,000 AF in 2025.

The City has seven operational groundwater wells and is planning further expansion of their Aquifer Storage and Recovery (ASR) program by an additional four wells over the next five years. These wells are maintained for emergency supply conditions for resilience in Roseville's water supply portfolio.

ES. 5 Past and Projected Water Use

The City supplies water to customers for the following water use sectors:

- Commercial
- Industrial
- Institutional and Governmental
- Multi-Family Residential
- Single Family Residential
- Landscape

The UWMP characterizes water use by sector for the years preceding the UWMP update as well as projections of water use for the next 20 years. Projections in the 2025 UWMP have been revised to include a 2045 buildout horizon, a revision from the 2020 UWMP. This adjustment of the buildout horizon is based upon recent trends in development and water usage. The City is planning for a population of up to 198,000 in the year 2045.

Additionally, the City is looking to the future by incorporating definitions of and projections for "high water users" in the technology sector, to accommodate potential data centers. These user impacts are captured in recent modeling as part of the City's Water Master Plan update as well as projections for this UWMP update under the Commercial category of water use.

The actual volume of water used by each sector for 2025 as well as the updated water use projections through the year 2045 are summarized in ES Table 1.

ES Table 1 Actual 2025 Water Use and Projected Water Use through the Year 2045

Water Use Sector	2025	2030	2035	2040	2045
Commercial	2,822	8,078	8,385	8,666	8,893
Industrial	386	667	693	716	735
Institutional/Governmental	388	671	696	720	739
Multi-Family	1,600	2,767	2,872	2,968	3,045
Single Family	17,080	29,533	30,655	31,681	32,511
Landscape	5,632	9,738	10,108	10,447	10,720
Losses	2,135	1,364	1,446	1,504	1,527
Groundwater recharge*	193	3,360	3,360	3,360	3,360
Sales/transfers/exchanges to other suppliers	1,657	0	0	0	0
Total	**31,893**	**56,179**	**58,214**	**60,061**	**61,529**
NOTES: All values are in AF/yr. Values represent potable water use only. *Groundwater recharge is expected in Normal or Wet years but not in drought years. This value is estimated for a 3-month injection window at 80% of capacity to allow for maintenance. The value each year will vary.					

In the table above, 2025 data represent actual values, while 2030-2045 are projected values of unconstrained demand. The projected values are based upon Unit Demand Factors applied to parcel data according to land use. The specific Unit Demand factors that have been applied as part of this analysis have been recently updated as part of the City's Water Master Planning effort, concurrent with this UWMP update. More information is available in Chapter 4.

ES. 6 SB X7-7

SB X7-7 called for a 20% reduction of water use from all retail water suppliers by the year 2020. The City met this target in 2020 as shown in 2025 DWR Table 5-, and that compliance is further confirmed in this 2025 UWMP update. No further action or analysis is needed in this UWMP.

ES. 7 and 8 Supply Reliability and Drought Risk Assessment and Water Shortage Contingency Plan

Assessments of supply reliability and drought risk were performed. The assessments considered the supply available for a single-year and five-year consecutive drought period for both the near-term and long-term. The

supply availability was compared to projected demand to determine if a deficit is projected for any of the conditions. Supply availability is subject to seasonal and climatic shortages, and so in dry or critically dry years increasing limitations are placed on the City for volumes of water that they receive from their supply contracts through Folsom Reservoir. The City has chosen to examine more stringent restriction sequences than they have experienced to date in this analysis. The City specifically examined a "dead pool" condition, modeled as the fifth consecutive year of drought, to simulate the circumstance of an exposed intake at Folsom Reservoir making primary supply contracts unavailable. The supply and drought risk assessment demonstrated that there are expected deficits in critically dry (single and multi-year droughts) year types that require supply augmentation by use of the City's groundwater infrastructure. Further, in year five of an extended drought, if "dead pool" were to occur at Folsom Reservoir, the City identified the need to augment supplies with a combination of groundwater, emergency intertie purchases, as well as strict conservation to meet demands. The highest level of deficiency identified represents approximately 28% of the annual demand and can be remedied by the application of a Stage 3 Drought condition through existing provisions in the municipal code. The municipal code identifies the objective of a stage 3 drought to be 30% conservation. The results of the supply reliability and drought risk assessment are summarized in ES Table 2.

ES Table 2 Near-Term and Long-Term Drought Risk Assessment Summary

Drought Type Assessed	Deficit Range	Description of Anticipated Deficit
Near-Term 5 Consecutive Dry Years	12,619	Deficit expected in fifth year only
Long-Term 5 Consecutive Dry Years	12,619 - 17,969	Deficit expected in fifth year only
NOTES: All values are in AF/yr. All other year types show that the City can adequately meet demand by augmentation of supply with necessary groundwater pumping.		

To mitigate the projected deficits in water supply, a Water Shortage Contingency Plan (WSCP) was prepared. The WSCP outlines the procedures that the City will take annually to determine whether there will be a water deficit based on projected water demand and supply availability. If a deficit is anticipated the City will formally declare a water shortage emergency condition of varying levels dependent on the severity of the deficit. The declaration of the water shortage emergency condition will trigger a set of demand reduction actions that are to be carried out by the City and all water users. These demand reduction actions are set forth in the Roseville Municipal Code Chapter 14.09 Water Conservation and Drought Mitigation Ordinance. The legal authority of the City to enforce compliance with the demand reduction actions is granted by the Water Conservation and Drought Mitigation Ordinance.

ES. 9 Demand Management Measures

In addition to the demand reduction actions of the Water Conservation and Drought Mitigation Ordinance, the City has taken a proactive approach to managing demand under normal conditions. Demand management measures include accurate metering through a meter retrofit program which was implemented from 2001 to 2011, recent deployment of Advanced Metering Infrastructure (AMI), public education and outreach, and regional rebate programs for efficient water use fixtures. System losses can account for a significant portion of water demand. The City continues to be proactive in its approach to address leaks in the system and reduce percentage

of overall losses, including a comprehensive auditory leak detection program, utilizing AMI, Water Distribution staff, and audit-based analysis to identify and repair leaks throughout the distribution system.

ES. 10 Plan Adoption and Submittal

The 2025 UWMP will be presented to City Council on June 17, 2026. The 2025 UWMP will be submitted to the California Department of Water Resources for compliance with the Urban Water Management Planning Act. Copies of the plan have been made publicly available at the City's offices, and an electronic version is also available for review and download on the City's website: www.roseville.ca.gov/UWMP.

Chapter 1 Urban Water Management Plan Purpose and Description

This chapter introduces the Urban Water Management (UWMP) including legislation requiring urban water retail suppliers to submit UWMPs, necessary information required to be reported in the 2025 UWMP, an overview of the changes to legislation since the 2020 City of Roseville UWMP, and a description of benefits to the supplier and its customers in completing a UWMP.

1.1 California Legislation

The Urban Water Management Planning Act was enacted in 1983 by the State of California Legislature (Legislature). The law established the requirement that an urban water supplier (supplier), providing municipal water to over 3,000 customers or 3,000 acre-feet (AF) annually, adopt an UWMP every five years. The aim of the Urban Water Management Planning Act was to address declarations and findings of the California Water Code (CWC):

California Water Code Section 10610.2

(a) The Legislature finds and declares all of the following:

(1) The waters of the state are a limited and renewable resource subject to ever-increasing demands.

(2) The conservation and efficient use of urban water supplies are of statewide concern; however, the planning for that use and the implementation of those plans can best be accomplished at the local level.

(3) A long-term, reliable supply of water is essential to protect the productivity of California's businesses and economic climate, and increasing long-term water conservation among Californians, improving water use efficiency within the state's communities and agricultural production, and strengthening local and regional drought planning are critical to California's resilience to drought and climate change.

(4) As part of its long-range planning activities, every urban water supplier should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry water years now and into the foreseeable future, and every urban water supplier should collaborate closely with local land-use authorities to ensure water demand forecasts are consistent with current land-use planning.

(5) Public health issues have been raised over a number of contaminants that have been identified in certain local and imported water supplies.

(6) Implementing effective water management strategies, including groundwater storage projects and recycled water projects, may require specific water quality and salinity targets for meeting groundwater basins water quality objectives and promoting beneficial use of recycled water.

(7) Water quality regulations are becoming an increasingly important factor in water agencies' selection of raw water sources, treatment alternatives, and modifications to existing treatment facilities.

(8) Changes in drinking water quality standards may also impact the usefulness of water supplies and may ultimately impact supply reliability.

(9) The quality of source supplies can have a significant impact on water management strategies and supply reliability.

Additionally, efforts aimed at protecting California's water supply were expanded in 2009 with Senate Bill X7-7 (SB X7-7), where Governor Schwarzenegger called for a 20% reduction statewide in per capita water use by 2020.

1.2 Updates to 2025 UWMP

Since the reporting of the 2020 UWMP, there have not been any substantial requirements added by the Legislature to the CWC.

1.3 Benefits of UWMP Reporting

The City is required by the state to Produce a UWMP, which is a critical document for ensuring that the City remains compliant with various regulations. Additionally, completion of a UWMP is necessary for the City to be eligible for any Department of Water Resources (DWR) administered grant or loan. Completion of the most recent UWMP may also be required for other state funding.

Beyond establishing grant or loan eligibility, the UWMP is intended to be a useful tool for the supplier and the public. Thoughtful preparation of the plan provides the supplier with an opportunity for forward thinking and planning, ensuring that their water supply remains robust in the future and continues to meet the dynamic needs of its customers. Throughout plan preparation the City, other suppliers, and local and regional authorities are encouraged to coordinate with one another creating a greater understanding of the region's water demands, ultimately promoting mindful utilization of the state's water resources.

1.4 Plan Organization

This UWMP was prepared in part by use of guidance issued by DWR via the *Urban Water Management Plan Guidebook 2025* (Guidebook). Organization of the plan chapters closely follows the suggested organization in the Guidebook. Where appropriate, submittal tables provided by DWR are used to report data; these tables are denoted by the prefix, "DWR Table". Additional data reporting is done in City of Roseville Tables denoted by the prefix, "COR Table".

Chapter 2 Plan Preparation

This chapter provides an overview of the process by which the plan was prepared and the coordination that was carried out.

2.1 Basis for Preparing a Plan

The City of Roseville Water Utility (City) is a public water system (PWS), which is a system that provides drinking water for human consumption through pipes or other constructed conveyances. Because the City serves over 3,000 customers and delivers over 3,000 AF annually, it is required to submit a UWMP. Metrics for total number of customers and volume of water supplied in the City's service area for 2025 are provided in DWR Table 2-1. The UWMP is required to be reviewed and updated every five years; this UWMP is an update to the most recent 2020 UWMP, adopted by the City of Roseville in 2021. The UWMP also confirms the City's compliance with the Urban Water Management Planning Act and SB X7-7.

DWR Table 2-1

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)
3110008	City of Roseville	53,148	31,893
	Total	53,148	31,893
NOTES: All volumes are in AF. Units of measure remain consistent throughout the UWMP as reported in DWR Table 2-3. This value is for potable water only, sourced from DWR Table 4-1.			

2.2 Individual or Regional Planning and Compliance

The CWC provides mechanisms for participating in area-wide regional, watershed or basin-wide urban water management planning. Per *Department of Water Resources Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* (DWR Methodologies), water suppliers who receive water from a shared wholesale supplier may form a regional alliance. Although the City and its neighboring water suppliers practice regional water supply planning, the City has not formed a regional alliance with other water suppliers. The City has prepared an individual UWMP, reporting solely on its own distribution service area, and will not adopt a Regional Urban Water Management Plan (RUWMP), stated in DWR Table 2-2.

DWR Table 2-2

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.	
☐	**Regional Urban Water Management Plan (RUWMP)**	
	If Supplier selected RUWMP, select name from the drop-down.	

2.3 Fiscal or Calendar Year and Units of Measure

General metrics for plan preparation are provided in DWR Table 2-3.

DWR Table 2-3

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

2.4 Coordination and Outreach

This section discusses the City's coordination with other agencies and the public.

2.4.1 Wholesale and Retail Coordination

Pursuant to CWC Section 10631(h) the City is to coordinate with wholesale supply agencies that provide the City with water. The City has water supply contracts with Placer County Water Agency (PCWA) and the U.S. Bureau of Reclamation (USBR). As a retail supplier the City has informed the two agencies of projected water use in five-year increments for the next 20 years. Documentation of this coordination is provided in Appendix A. DWR Table 2-4 lists the two agencies outlined above with whom the City has coordinated.

DWR Table 2-4

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
U.S. Bureau of Reclamation
Placer County Water Agency

2.4.2 Coordination with Other Agencies and the Community

The City has actively sought to coordinate preparation of the UWMP with local and regional agencies as well as with the general public. The City recognizes that how it currently utilizes and plans to utilize its water supply affects not only its own customers, but customers served by neighboring water agencies and individuals or groups that rely on private wells. As the City is dedicated to the responsible and sustainable management of local and regional water resources, it has invited participation from the agencies listed in COR Table 2-A. Documentation of this coordination is provided in Appendix B. On February 4, 2026, the City notified the neighboring cities and counties that preparation of the 2025 UWMP update had begun. Additionally, the City will hold a public hearing on June 17, 2026, to introduce the 2025 UWMP to the public and solicit feedback and answer questions regarding the plan.

COR Table 2-A Outreach with Local and Regional Agencies

Agency Name	Agency Type
U.S. Bureau of Reclamation	Wholesale Supplier
Placer County Water Agency	Water Supplier
California American Water	Water Supplier
Citrus Heights Water District	Water Supplier
Sacramento Municipal utility District	Water Supplier
Sacramento Suburban Water District	Water Supplier
City of Roseville, City Manager	Local City
Placer County Public Works Department	Local County
Placer County Community Development Resource Agency	Local County
Regional Water Authority Sacramento	Regional Organization
City of Sacramento	Water Supplier
Sacramento County	Water Supplier

Chapter 3 System Description

This chapter provides a description of the system including information on the distribution system; service area boundary; service area climate; service area population, demographics, and socioeconomics; and land uses within the service area.

3.1 General Description

The City of Roseville Water Utility (City) is a public utility owned and operated by the City of Roseville, which is on the interstate 80 corridor, approximately 15 miles northeast of downtown Sacramento, California. The City obtains its surface water from Folsom Reservoir through wholesale purchase from the United States Bureau of Reclamation (USBR) and an additional water contract with Placer County Water Agency (PCWA). The City also maintains and operates several regional interties. As an emergency supply in times of drought, the City also has a suite of ASR and production wells that provide additional water supply reliability, with plans to construct more.

3.1.1 Transmission

The City has a diversion capacity of 150 cubic feet per second (cfs) or 96 million gallons per day (MGD) at Folsom Dam. A pump station conveys raw water through parallel pipelines. The original 84-inch diameter pipeline was constructed at the same time as the pump station, and a 72-inch diameter pipeline was completed in 2010 as a joint effort between the City and other regional water purveyors. The common pipeline facilities used by regional partners split at the "Hinkel Y", and from there raw water is conveyed through parallel pipelines – a 60-inch diameter pipeline and a 48-inch diameter pipeline – to the City's Water Treatment Plant (WTP).

3.1.2 Water Treatment

The City's only water treatment plant, located near Roseville in the Granite Bay area, has a treatment capacity of 100 MGD. There are no plans to expand the facility as the WTP is sized just above the pumping capacity of the Folsom Dam pump station. The WTP is a conventional treatment plant, and the treatment processes include coagulation, flocculation and sedimentation, clarification, filtration, and disinfection. The treatment train, beginning with the intake at Folsom Reservoir, is shown in Figure 3-1.

Sedimentation takes place in three parallel clarifiers. The chemicals injected as part of the flocculation and sedimentation processes are caustic soda, alum, and a cationic polymer. There are 12 anthracite sand filters, which combined have a maximum filtration rate of about 83,000 gallons per minute (gpm). The clear wells have a total volume of 358,500 gallons. Disinfection is achieved using sodium hypochlorite. The City also adds fluoride to treated water at a concentration of 0.7 parts per million (ppm) prior to distribution.

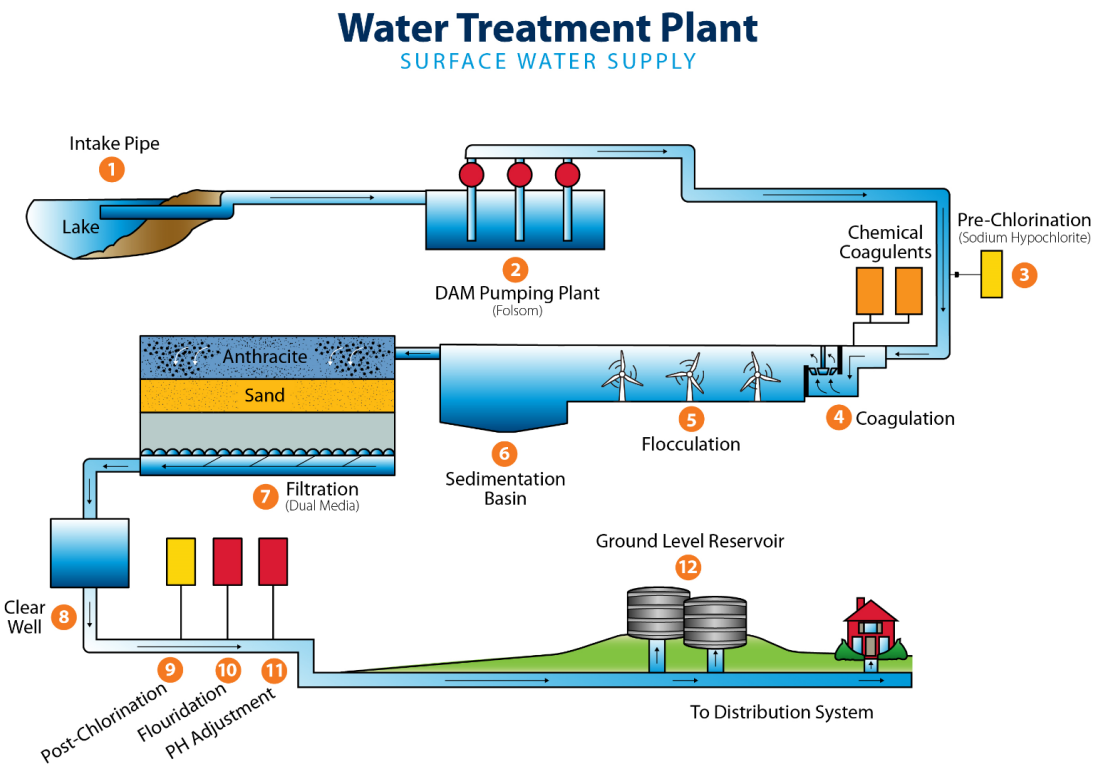


Figure 3-1 City of Roseville Water Treatment Plant Treatment Train

3.1.3 Storage

The City currently utilizes 8 potable water storage tanks located across the service area, which are critical for maintaining water supply and system pressure during typical demand fluctuations, peak demand fluctuations, and emergency demands. The eight water storage tanks have a total nominal capacity of 44 million gallons (MG). The capacity of each tank is listed in COR Table 3-A.

COR Table 3-A Potable Water Storage Tanks

Facility	Existing or Future	Year Constructed	Type	Pressure Zone Served	Capacity (MG)
WTP	Existing	1971	Steel	1, 2, 4, 5	2
WTP	Existing	1990	Pre-Stressed Concrete	1, 2, 4, 5	4
WTP	Existing	2004	Pre-Stressed Concrete	1, 2, 4, 5	6
Northeast	Existing	1998	Pre-Stressed Concrete	1, 2, 4, 5	10
Northeast	Existing	2009	Pre-Stressed Concrete	1, 2, 4, 5	7.25
Halverson	Existing	2008	Pre-Stressed Concrete	2	2.9
West Side Tank 1	Existing	2023	Pre-Stressed Concrete	4	6
West Side Tank 2	Existing	2023	Pre-Stressed Concrete	4	6

3.1.4 Distribution Network

The City maintains a distribution network consisting of approximately 723 miles of pressure pipe ranging from 1 inch to 72 inches in diameter. The network of pipes delivers potable water from the WTP to the City's customers to meet water demands during average day, maximum day, and peak hour conditions. The City aims to operate its system at a minimum pressure of 50 pounds per square inch (psi). Under existing conditions, the City meets the minimum pressure criterion in almost all cases, with few exceptions. These exceptions are not considered to be significant enough to impact the quality of customers' water service in any significant way. On average the distribution system pressure stays around 80 psi across all measured conditions.

There are several approved development plans in the western portion of the City which are currently in development and buildout. The City will serve these customers through new facilities which were designed and are being constructed by the developers under the oversight of the City's Development Services Department. These new facilities will be incorporated into the City's distribution network.

Existing pump stations throughout the City's distribution system are summarized in COR Table 3-B.

COR Table 3-B Potable Water Pump Stations

Facility	Existing or Future	Pressure Zone Served
Dual Purpose Pump Station	Existing	1, 2
Highland Reserve North Pump Station	Existing	5
Pleasant Grove Pump Station	Existing	1
Pacific Fruit Express (PFE) Pump Station	Existing	Emergency Intertie
West Side Pump Station	Existing	4

3.1.5 Groundwater Wells

The City currently maintains 7 Aquifer Storage and Recovery (ASR) and production groundwater wells, which are intended for emergency supply augmentation and have a combined capacity of approximately 23,300 acre-feet per year (AF/yr) or 20.8 MGD. Extraction capacities of each well are listed in COR Table 3-C. Realistic production capacity in an emergency supply condition is estimated as 80% of total capacity to conservatively account for maintenance.

During the 2015 drought, the water level in Folsom Reservoir was the lowest on record, resulting in significant fluctuations in water supply. This drought highlighted the risk that the Folsom Dam intake structure could become exposed, or what has been referred to as the "dead pool" condition. Although this has not occurred to date, the City relies upon this intake structure to receive supply from USBR and PCWA – the majority of its regular supply portfolio. Being cognizant of this potential vulnerability, in the early 2000's the City begun developing its Aquifer Storage and Recovery Program. Since then, the City has embarked upon a continuous expansion of the ASR program to provide increased flexibility in case of emergency. The City remains engaged in an ongoing effort along with regional partners to invest in identifying a long-term solution to the vulnerability of the intake structure at Folsom Reservoir.

As part of this UWMP, the City is examining this "dead pool" condition, and planning for the circumstance when the City is unable to receive any surface water supplies from USBR or PCWA, examined further in Chapter 6,

Section 6.2.1 and Chapter 7, Section 7.1.3.2. The City is also continuing expansion of the ASR program to maintain adequate capacity to serve the basic needs of the City in the event of extreme drought or other impacts to surface water supplies.

The City's wells are constructed to utilize Aquifer Storage and Recovery technology. ASR is the recharge of water in an aquifer through specially designed groundwater wells and recovery of water from that same well or others after time has passed. During times when there are excess surface water supplies, water can be injected using the ASR and production wells. During dry periods or when additional water is needed for the environment or other beneficial needs, this water can be withdrawn from the aquifer. Six of the existing operational wells have ASR capabilities. Two more wells with ASR capabilities are currently under construction and are expected to be completed in the Fall of 2026. The City plans to construct 2 additional wells with ASR capabilities by 2030. Following that, the City will reassess its ASR program, and as part of a future Ground Water Strategic Plan update, evaluate a potential expansion of the program beyond 2030.

COR Table 3-C Existing City of Roseville Wells

Facility	Install/Rehab Date	Well Depth (Feet)	Zone Served	Theoretical Pumping Capacity (MGD)	Production Capacity (80% of Theoretical) (MGD)	ASR Capable (Y/N)
Oakmont, No. 5	1978/ 1999	360	1	2.1	1.7	N
Diamond Creek, No. 6	2002	460	4	4.0	3.2	Y
Woodcreek North, No. 7	2008	440	1	2.2	1.8	Y
Hayden Parkway, No. 8	2015	520	4	3.1	2.5	Y
Westbrook Boulevard, No. 9	2023	526	4	3.6	2.9	Y
Blue Oaks Boulevard, No. 12	2015	490	4	3.2	2.6	Y
Solaire Drive, No. 18	2023	555	4	2.6	2.1	Y

3.1.6 Interties

There are 18 interties that the City maintains with the surrounding jurisdictions of PCWA, San Juan Water District (SJWD), California-American Water Company (Cal-Am), Citrus Heights Water District (CHWD), and Sacramento Suburban Water District (SSWD). Some of these interties are in regular operation with water wheeling and purchases, while others are emergency use only. Although the City of Roseville no longer has a water supply contract with SJWD, those interties remain in case of emergency. Each intertie is listed in COR Table 3-D.

COR Table 3-D Interties with Neighboring Water Suppliers

Intertie Agency	Facility	Year Constructed	Operational Control Agency	Control Valve Size (Inches)	Agency Receiving Water	Avg. Days/ Yr. Utilized 2021-2025	Days Utilized 2025
SJWD	WTP	1996	Roseville	16	Roseville	0	0
	Eureka	1999	Roseville	12	Roseville	0	0
	Cavitt Stallman	1999	Roseville	12	Roseville	0	0
PCWA	Five Star	1995	PCWA	12	Roseville	0	0
	Stoneridge	1998	Roseville	12	PCWA	275	275
	Highland Park	2000	Roseville	12	PCWA	0	0
	Tinker	1989	Roseville	16	Roseville	365	365
	Blackwood – Bianchi Estates	2000	PCWA	12	PCWA	365	365
	Woodcreek	2025	PCWA & Roseville	12	Roseville	0	0
	Crowder	2001	Cal-Am	12	Cal-Am	365	365
	PFE	2005	Roseville	16	Cal-Am	365	365
	Park Drive/ Pleasant Grove	2000	PCWA	12	Roseville	0	0
	Vineyard Rd	1990	Cal-Am	12	Cal-Am	365	365
Cal-Am	Vernon Oaks	1988	Roseville	12	Cal-Am	0	0
CHWD	Orlando	1989	Roseville	6	CHWD	0	0
	Blossom Hill	1986	Roseville	10	CHWD	0	0
	Fairway	2017	Roseville	8	CHWD	0	0
SSWD	PFE/ North Antelope	2005	Roseville	20	Both	0	0

3.1.6.1 San Juan Water District Interties

The three interties that exist between the City and SJWD under normal operations remain closed and are only intended for emergency use. The intertie at the WTP can deliver water from SJWD to the City only (single direction valve). The Eureka and Cavitt Stallman interties can deliver water to and from the City (bi-directional valving).

3.1.6.2 Placer County Water Agency Interties

The Bianchi Estates, Crowder, and Vineyard interties are valved for single direction flow from Roseville out to PCWA customers (Cal-American Water). The Highland Park and Pleasant Grove interties are single direction, delivering from PCWA to Roseville. They cannot deliver water from the City to PCWA, but the other nine remaining interties can. Three of the eleven PCWA interties under normal operations remain open. The Stoneridge intertie regularly pumps water from the City to PCWA. The Blackwood intertie is regularly kept open as it feeds PCWA's Bianchi Estates system and is the only source of supply for that area. The Tinker intertie is normally open in order to deliver water from PCWA to Cal-Am through the Crowder and PFE interties. The Woodcreek intertie remains closed under normal operating conditions and is only used for emergencies or maintenance outages.

3.1.6.3 Citrus Heights Water District

The three interties between the City and CHWD are valved bidirectionally to enable water delivery to and from the City; however, system pressures in the vicinity of these interties indicates that flow into the City would likely be the only possibility. All three are intended for emergency use only and remain closed under normal operating conditions.

3.1.6.4 Sacramento Suburban Water District Intertie

The intertie between the City and SSWD is part of the regional development of conjunctive use programs. During an emergency or drought years, the PFE pump station will pump water from SSWD's service area into Zone 1 of the City. This intertie is bidirectional and can be used to deliver water from the City to SSWD. A mutual aid agreement between the City and SSWD was recently completed.

3.2 Service Area

The City's service area boundary lies within the limits of the City of Roseville. There are a few small areas within the city limits that are served by PCWA, SJWD, and CHWD, totaling approximately 1,729 services. The service area is approximately 27,421 acres (ac). The service area and the facilities mentioned in Section 3.1 are shown in Figure 3-2.

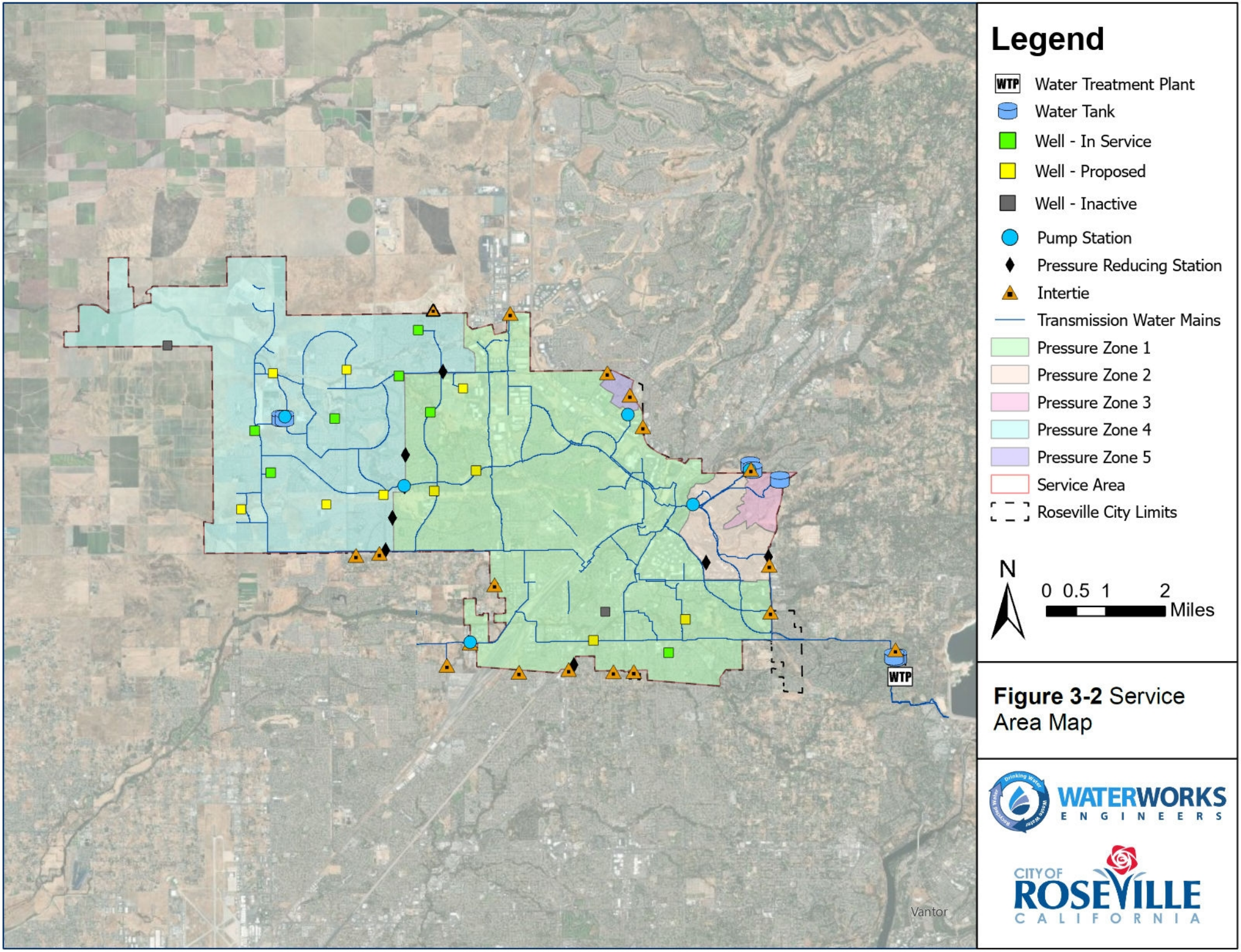


Figure 3-2 Service Area Map

WATERWORKS ENGINEERS

CITY OF ROSEVILLE CALIFORNIA

3.3 Service Area Climate

The service area experiences cool and humid winters and hot and dry summers. The City of Roseville's climate is similar to the City of Fair Oaks, which is in close proximity. Historical climate data was obtained from California Irrigation Management Information System (CIMIS) for station 131, which is located in Fair Oaks, for the reporting period of this UWMP and is summarized in COR Table 3-E. The average monthly temperature from 2021 to 2025 ranged from 39.1 degrees Fahrenheit (°F) to 96.1 °F. Typically the wet season begins in October and ends in May, with an average annual total precipitation of 21.4 inches.

COR Table 3-E Monthly Average Climate Data from 2021 through 2025

Month	Average Minimum Temperature (°F)	Average Maximum Temperature (°F)	Average Temperature (°F)	Average Monthly Precipitation (inches)
January	39.1	59.7	48.4	3.1
February	39.4	62.5	50.2	2.9
March	42.3	65.0	53.1	2.5
April	45.7	74.1	59.3	0.7
May	50.3	82.2	66.1	0.3
June	55.7	90.1	72.9	0.1
July	59.0	96.1	77.5	0.1
August	59.7	95.0	76.9	0.1
September	57.8	90.5	72.9	0.4
October	51.0	79.7	63.9	2.2
November	42.9	65.3	52.6	2.7
December	40.6	56.1	47.4	6.3
Average	48.6	76.4	61.8	1.8

3.4 Service Area Population and Demographics

This section describes the population, demographic, and employment conditions of the City's water service area during the reporting period of the UWMP as well as future projections through 2045.

3.4.1 Service Area Population

Water use is directly tied to a service area's population, and analyzing population growth and development trends is critical for the City's planning of water distribution facilities and infrastructure. Current and projected service area population estimates are provided in DWR Table 3-1.

These projections differ from total population projections since a small number of City residents are served by adjacent water purveyors. The projections were estimated in coordination with the City of Roseville's General Plan (last updated in 2020), more recent development trends, direct input from the City of Roseville's Environmental Utilities and Planning Divisions, and concurrent Water Master Planning efforts. At this time, the City of Roseville is engaged in an update to their analysis of development trends and growth, but this process will not be concluded by the time this document is published.

DWR Table 3-1

Submittal Table 3-1 Retail: Population - Current and Projected Water Code Section 10631(a)					
Population Served	2025	2030	2035	2040	2045
	171,153	172,710	183,077	190,519	193,366
NOTES: Population projections shown above are based on the buildout population projection from the 2020 General Plan of 198,000, with an empirically derived trend-based data showing on recent growth in actual population values, adjusted to reflect service area population.					

3.4.2 Social, Economic, and Demographic Factors

The City of Roseville's population in 2024 (most recent data available), according to the American Community Survey (ACS), was reported to be 56.3% White alone (not Hispanic or Latino), 20% Hispanic or Latino, 11.7% Black alone, 6.2% Asian alone, 4.6% two or more races alone, and all other race categories were less than 1%. A summary of all race categories surveyed is provided in COR Table 3-F. The United States Census Bureau reports that the median household income from 2020-2024 was $119,288. ACS reports that in 2024, 5.9% of the population was in poverty and 17.4% of the population was 65 years of age and over. The social, economic, and demographic factors are not believed to affect water management and planning.

COR Table 3-F City of Roseville 2024 Population by Race

Race Category	Percentage
American Indian and Alaska Native alone, not Hispanic or Latino	0.5%
Asian alone, not Hispanic or Latino	6.2%
Black alone, not Hispanic or Latino	11.7%
Hispanic or Latino	20.0%
Native Hawaiian and other Pacific Islander alone, not Hispanic or Latino	0.2%
White alone, not Hispanic or Latino	56.3%
Some other race alone, not Hispanic or Latino	0.5%
Two or more races alone, not Hispanic or Latino	4.6%

3.5 Land Uses within the Service Area

A requirement of the California Water Code holds that land use projections be coordinated with other local and regional land use authorities.

> *California Water Code 10631.*
>
> *(a) . . .The description shall include the current and projected land uses within the existing or anticipated service area affecting the supplier's water management planning. Urban water suppliers shall coordinate with local or regional land use authorities to determine the most appropriate land use information, including, where appropriate, land use information obtained from local or regional land use authorities, as developed pursuant to Article 5 (commencing with section 65300) of Chapter 3 of Division 1 of Title 7 of the Government Code.*

In August 2020, the City of Roseville completed its latest update to the General Plan, with a planning horizon that extends into 2035. The General Plan includes the Land Use Element, which is provided in Appendix C. The Land Use Element discusses existing and future land use conditions, with an intended purpose of setting guidelines for managing land use change. The City of Roseville has both residential and non-residential land uses; density and intensity guidelines for each land use type respectively are set forth in the Land Use Element. The land use categories as well as corresponding characteristics from the Land Use Element are summarized in COR Table 3-G and COR Table 3-H.

COR Table 3-G Residential Land Uses and Development Guidelines

Land Use Category	Dwelling Units Per Acre	Estimated Population Per Gross Acre
Low-Density Residential (LDR)	0.5 – 6.9	1.45 – 20.1
Medium-Density Residential (MDR)	7.0 – 12.9	20.3 – 37.41
High-Density Residential (HDR)	≥ 13	≥ 27.3

COR Table 3-H Non-Residential Land Uses and Development Guidelines

Land Use Category	Floor to Area Ratio
Neighborhood Commercial (NC)	20% - 40%
Community Commercial	20% - 40%
Regional Commercial	20% - 40%
Business Commercial	20% - 40%
Light Industrial	20% - 50%
Tech/ Business Park	20% - 50%
General Industrial	20% - 50%
Transfer Station	Varies
Central Business District	≤ 300%
Public/ Quasi-Public	Varies

3.6 Water Utility Planning

Currently the City of Roseville is engaged in a Water Master Planning effort in parallel with the development of this 2025 UWMP. The Water Master Planning effort will be ongoing as of the publishing of this UWMP. As part of these utility planning efforts, the City has identified recommendations for updates to water use Unit Demand Factors by parcel type. These updated Unit Demand Factors are included in Chapter 4 and have been used to develop demand projections through the planning horizon. The 2020 General Plan estimated buildout at approximately 2035. However, the City has observed recent trends indicating that residential buildout may occur in the next 5-10 years with commercial following behind in the 15–20-year range. These trends have informed an updated understanding of the pace of development and therefore identified an adjusted buildout horizon of approximately 2045, which has been used in this planning document as well as the City's Water Master Plan.

Chapter 4 Water Use Characterization

This chapter provides a description and quantification of the City's past and current water use and future water use projections through the year 2045. Projections provided herein were coordinated with other local and regional planning documents in an effort to develop reliable water demand projections.

4.1 Non-Potable Versus Potable Water Use

The City utilizes both potable and non-potable water to meet the diverse water needs of the customers within the service area. Potable water is water that is safe to drink and meets all California drinking water regulations per Title 22. The City's potable water supplies consist of raw water treated at the WTP, finished water wheeled from other agencies through interties, raw water received from other agencies through interties which is subsequently treated at the WTP, and additional emergency groundwater from various wells throughout the City that is chemically treated on site.

Additionally, the City supplies recycled water, which is non-potable water for approved uses. Recycled water is wastewater that is treated to Title 22 disinfected tertiary standards. The City operates two wastewater treatment plants (WWTPs), Dry Creek and Pleasant Grove, both of which treat wastewater to the high standard required of recycled water. The recycled water produced at the WWTPs is distributed in a separate "purple pipe" system from the potable water system and is utilized for landscape irrigation, environmental releases, cooling water, and construction uses.

Lastly, the City delivers raw water, which is also non-potable, to Linda Creek outside of the City's service area. Raw water is untreated water that is used in its natural state or with minimal treatment. The City is required to discharge 0.8 cubic feet per second (cfs) of supplemental raw water to Linda Creek when creek flows are low as part of its instream flow commitment. A 10-year average annual total for this discharge is 350 AF, but each year's total can vary significantly depending on hydrologic conditions and resulting flow within the creek. This discharge is also subject to drought restrictions and can be curtailed during Stage 3 or higher-level drought restrictions should that be necessary. The City does not deliver raw water to any of its customers within the service area.

4.2 Past, Current, and Projected Water Use by Sector

The following sections describe and quantify past, current, and projected water use. Water uses are delineated by various sectors. Additionally, a requirement as of the 2020 UWMP requires quantification of system water losses for the five years preceding each UWMP.

4.2.1 Water Use Sectors Listed in Water Code

Water Code Section 10631(d) requires that water uses be identified for at least the ten following sectors; definitions for each of the sectors are adapted from those provided in the Guidebook.

- **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. This is a retail demand.
- **Multifamily** – Multiple dwelling units contained within one building or several buildings within one complex. This is a retail demand.
- **Commercial** – A water user that provides or distributes a product or service. Water Code 10608.12(e). This is a retail demand.

- **Industrial** – Water user that is primarily a manufacturer or processor of materials as defined by the North American Industry Classification System (NAICS) code sectors 31 to 33, inclusive, of an entity that is a water user primarily engaged in research and development. Water Code Section 10608.12(i). This is a retail demand.
- **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 per Water Code Section 10608.12(j). This is a retail demand.
- **Landscape** – Water connections supplying water solely for landscape irrigation. Such landscapes may be associated with single-family residential, multi-family, commercial, industrial, or institutional/ governmental sites, but are considered a separate water use sector if the connection is solely for landscape irrigation. This is a retail demand.
- **Sales to other agencies** – These are water sales made to another agency. Projected sales may be based on projected demand provided by the receiving water supplier. This is a wholesale demand.
- **Saline Water Intrusion barriers, groundwater recharge, or conjunctive use, or any combination thereof** – *Conjunctive use* is a water management strategy where surface water and groundwater are managed together to increase the total water supply. For purposes of the UWMP, conjunctive use is seen as a management strategy rather than as a water use. This type of water use is best reported as groundwater recharge. *Groundwater recharge* can occur through both natural and artificial means. In the context of this UWMP, artificial groundwater recharge is the managed and intentional replenishment of natural groundwater supplies using techniques such as infiltration basins or injection wells. Water used for groundwater banking or storage may also be reported using this sector. If all, or a portion of, the groundwater recharge is subsequently pumped out of the basin in the same year, that water is considered "pass-through" storage and reporting this as a groundwater recharge use may lead to a double counting of water uses because of the subsequent retrieval and delivery of that same water in the same year to customers. Water used for groundwater recharge, but not retrieved in the same year, could be considered actual groundwater recharge and reported as such. *A saline water intrusion barrier* is the practice of injecting water into a freshwater aquifer to prevent the intrusion of saltwater. These may be either a wholesale or retail demand. The City currently does not have any demands under this water use sector.
- **Agricultural** – Water used for commercial agricultural practices including irrigation and other agronomic uses. Water used for processing agricultural products (e.g., food, beverage, or textile manufacturing) may also be considered industrial process water rather than agricultural water use. This may be either a wholesale or retail demand. The City currently does not have any demands under this water use sector.
- **Distribution system water losses** – Losses that were reported in accordance with the 12-month water loss for each of the prior five years.

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

Presently, the City has no additional water use sectors outside of the ten listed in CWC. Furthermore, the City expects that future water use will be restricted to the same sectors by which water is currently used based on land use projections from the Land Use Element. As a note, the City is currently engaged in an effort to define and add regulatory language for "high water users" in its municipal code to address increasing needs of the technology industry. These projected users have been incorporated into the analyses for this UWMP.

4.2.3 Past Water Use

Past potable water use by sector was analyzed to estimate water use projections into the next 20 years, as required by the CWC. By examining past water use, trends can be understood. These trends includes effects of temporary use restrictions during drought years, effects of long-term demand management measures, and the changing profile of service connections by water use sector. Water uses for 2025 and the five years preceding this plan, as well as the last two UWMP years, are summarized in COR Table 4-A.

COR Table 4-A Past Potable Water Use Volumes by Sector

Water Use Sector	2015	2020	2021	2022	2023	2024	2025
Commercial[1]	1,930	2,630	2,986	3,000	3,096	2,690	2,822
Industrial[1]	934	254	219	246	181	334	386
Institutional and Governmental	561	412	421	390	387	384	388
Multi-Family	1,464	1,416	2,115	1,327	1,437	1,589	1,600
Single-Family	11,680	17,115	16,377	15,945	15,809	17,274	17,080
Landscape	4,152	6,422	6,548	6,504	6,300	5,883	5,632
Other [2]	–		–	–	–	–	--
Total	20,721	28,249	28,667	27,412	27,210	28,155	27,909

NOTES: [1]Accounting system and categorization changes caused a recategorization of some parcels in the Industrial category to the Commercial category between 2015 and 2020. All volumes are in AF.
[2]In 2015 and subsequent years thereafter, all water demands are characterized by water use sectors defined in the CWC.

4.2.4 Current Water Use

The City's potable and non-potable water uses for 2025 by sector are reported in DWR Table 4-1. There are no existing potable or non-potable demands for the use types of saline barriers, conjunctive use, or agricultural.

DWR Table 4-1

Submittal Table 4-1 Retail: Total Uses for Potable and Non-Potable Water — Actual Water Code Section 10631(d)(1)			
Use Type	Additional Description	2025 Actual Water Use	
		Potable or Non-Potable	Volume (AF)
Commercial	Including non-metered	Potable	2,822
Industrial	Including non-metered	Potable	386
Institutional/Governmental	Including non-metered	Potable	388
Multi-Family	Including non-metered	Potable	1,600
Single Family	Including non-metered	Potable	17,080
Landscape	Including non-metered	Potable	5,632
Distribution System Water Loss	Including non-metered	Potable	2,135
Sales/Transfers/Exchanges to other Suppliers	Including non-metered	Potable	1,657
Groundwater recharge	Excludes groundwater pumped and supplied to the distribution system	Potable	193
Landscape	Recycled Water used inside the City	Non-Potable	3,029
Industrial	Recycled Water used at Roseville Energy Park	Non-Potable	428
Sales/Transfers/Exchanges to other Suppliers	Recycled Water sold outside the City	Non-Potable	301
Sales/Transfers/Exchanges to other Suppliers	Discharge to Linda Creek[1] and water wheeled on behalf of San Juan Water District.	Non-Potable	387
		Subtotal Potable	31,893
		Subtotal Non-Potable	4,145
		Total	36,038

NOTES: All volumes are in AF. The volume of losses are for potable water only; non-potable water losses are not calculated. The 2025 Water Audit has not been validated at the time of plan preparation and final losses reported in the validated Water Audit may differ.
[1]Water discharged to Linda Creek is based upon a supplemental flow requirement and creek conditions; therefore, it will vary year over year.

4.2.5 Projected Water Use

The City regularly analyses future water use demands to determine the reliability of system supplies and identify any vulnerabilities. As stated in 3.4.1, the service area population directly impacts water use demands. The City is

currently undergoing a water master planning effort. Part of that process is reexamining unit demand factors for water use which had previously been established in 2002. This 2025 UWMP update has incorporated the recommended revised unit demand factors from that effort and applied them to the demand projection analysis. To estimate projected water use through 2045, the following approach and resources were utilized.

Assumptions:

- The Planning Division's population projection from the 2020 General Plan Land Use Element was utilized, which estimates a population of 198,000 at buildout of all planned development.
- It is assumed that all planned development would be complete by 2045 as explained in Section 3.6.
- An estimated 1729 dwelling units in the City of Roseville are not served by the City. The number of dwelling units are estimated based on other utility accounts.

Population Projection and Water Use Projection Steps

1. Calculated the population not served by the City by multiplying the number of dwelling units by the 2014-2018 American Community Survey (ACS) household multiplier (2.68[1]) used in the 2020 General Plan Housing Element.
2. Subtracted the population not served by the City from the total California Department of Finance (CDoF) City of Roseville population to obtain the service area population for 2021 through 2025.
3. Estimated the current percentage of development for each specific plan from the latest Planning Department records.
4. Input current percentage of development into the City of Roseville's Environmental Utilities (EU) Department's Water Demand Tracking Tool, which calculates buildout water usage for each specific plan. Water use in the Tool is calculated by applying unit demand factors, specific to land use categories, to each of the dwelling units. Demand factors and total water use for all specific plans are provided in COR Table 4-B and COR Table 4-C, respectively.
5. Plotted the service area population from 2021 through 2025 and the projected population for 2045 to approximate the population for 2030, 2035, and 2040. The resultant population projections were previously summarized in DWR Table 3-1.
6. Updated the Water Demand Tracking Tool for 2045 to reflect 100% at buildout.

[1] https://data.census.gov/table/ACSST5Y2018.S1101?q=Roseville+city,+California

COR Table 4-B Updated (Recommended) Unit Demand Factors for Land Use Type

Residential Land Use Categories	Unit Demand Factor (gpd/DU)
Low Density Residential 1 – LDR1 (<3.5 DUs/Acre)	600
Low Density Residential 2 – LDR2 (3.5 to 5 DUs/Acre)	420
Low/Medium Density Residential 1 – LMDR1 (>5 to 6 DUs/Acre)	350
Low/Medium Density Residential 2 – LMDR2 (>6 to 8 DUs/Acre)	300
Medium Density Residential – MDR (>8 to 12 DUs/Acre)	220
High Density Residential – HDR1 (>12 to 16 DUs/Acre)	280
High Density Residential – HDR2 (>16 DUs/Acre)	190
Non-Residential Land Use Categories	**Unit Demand Factor (gpd/acre) (gpd/Acre)**
Commercial/Retail	2,100
Business Professional	2,680
Light Industrial	2,570
Industrial	2,570
Elementary School	2,800
Middle School	2,140
High School	3,420
Public (Fire Station)	2,350
Park/Recreation	2,112
Park/Recreation – Special Landscape Area	3,840
New Technology Industries[1]	**Unit Demand Factor (gpd/site)**
Medium	195,000
Large	780,000
NOTES: [1]These additional demand categories are projected in the UWMP. There have not yet been changes to zoning or land use categories in the General Plan or the Municipal Code to reflect these categories.	

COR Table 4-C Specific Plan Water Demands at Buildout by Water Use Sector

Specific Plan	Commercial (AF/yr)	Industrial (AF/yr)	Institutional/ Governmental (AF/yr)	Multi-Family (AF/yr)	Single Family (AF/yr)	Total (AF/yr)
Infill	1,102	1,489	6,859	321	6,301	16,071
ATCSP	50	8	30	46	6	140
DHCSP	237	0	0	233	1	471
DSCSP	444	0	5	255	11	716
WBSP	17	0	69	140	579	804
COSP	70	1,340	63	84	170	1,726
DTRSP	260	7	88	16	64	434
RSGW	67	0	0	36	55	158
SE	493	0	216	391	933	2,032
NE	1,629	0	63	0	368	2,060
STRSP	97	0	253	159	1,108	1,616
NCRSP	1,225	224	450	620	1,104	3,623
HRNSP	379	0	221	180	497	1,277
NWRSP	312	0	1,189	345	3,439	5,286
DWSP	29	0	905	21	1,434	2,390
NI	98	4,141	91	0	401	4,731
NRSP	199	0	483	192	2,033	2,907
WRSP	131	182	1,102	553	3,418	5,384
SVSP	457	0	410	385	1,725	2,976
CVSP	22	0	68	116	519	725
ARSP	120	0	130	197	666	1,113

NOTES: Atlantic Street Corridor Specific Plan (ATCSP); Douglas-Harding Corridor Specific Plan (DHCSP); Douglas-Sunrise Corridor Specific Plan (DSCSP); Westbrook Specific Plan (WBSP); Campus Oaks Specific Plan (COSP); Downtown Roseville Specific Plan (DTRSP); Riverside Gateway (RSGW); Southeast Roseville (SE); Northeast Roseville (NE); Stoneridge Specific Plan (STRSP); North Central Roseville Specific Plan (NCRSP); Highland Reserve North Specific Plan (HRNSP); Northwest Roseville Specific Plan (NWRSP); Del Webb Specific Plan (DWSP); North Industrial (NI); North Roseville Specific Plan (NRSP); West Roseville Specific Plan (WRSP); Sierra Vista Specific Plan (SVSP); Creekview Specific Plan (CVSP); Amoruso Ranch Specific Plan (ARSP).

COR Table 4-D Current and Projected Water Use Volumes

Use Type	2025 (AF)	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)
Commercial	2,822	8,078	8,385	8,666	8,893
Industrial	386	667	693	716	735
Institutional/Governmental	388	671	696	720	739
Multi-Family	1,600	2,767	2,872	2,968	3,045
Single Family	17,080	29,533	30,655	31,681	32,511
Landscape	5,632	9,738	10,108	10,447	10,720
Distribution System Water Loss	2,135	1,364	1,446	1,504	1,527
Sales/Transfers/Exchanges to other Suppliers	1,657	0	0	0	0
Groundwater recharge	193	3,360	3,360	3,360	3,360
Recycled water used inside the City	3,029	3,530	3,992	4,454	4,917
Recycled water used at Roseville Energy Park	428	499	564	630	695
Recycled water sold outside the City	301	350	396	442	488
Raw water discharged to Linda Creek	387	350	350	350	350
Total	**36,038**	**60,908**	**63,517**	**65,937**	**67,980**

NOTES: All Volumes are in AF. 2025 values represent metered usage data, inclusive of passive conservation efforts realized by City customers in their usage patterns. 2030 and subsequent years represent unconstrained demand projections utilizing Unit Demand Factors applied to land use data.

DWR Table 4-2

Submittal Table 4-2 Retail: Total Uses for Potable, and Non-Potable Water — Projected Water Code Section 10631(d)(1)						
Use Type	Additional Description	**Projected Water Use[1]**				
		Potable or Non-Potable	**2030 (AF)**	**2035 (AF)**	**2040 (AF)**	**2045 (AF)**
Commercial	Including non-metered	Potable	8,078	8,385	8,666	8,893
Industrial	Including non-metered	Potable	667	693	716	735
Institutional/Governmental	Including non-metered	Potable	671	696	720	739
Multi-Family	Including non-metered	Potable	2,767	2,872	2,968	3,045
Single Family	Including non-metered	Potable	29,533	30,655	31,681	32,511
Landscape	Including non-metered	Potable	9,738	10,108	10,447	10,720
Distribution System Water Loss	estimated	Potable	1,364	1,446	1,504	1,527
Sales/Transfers/Exchanges to other Suppliers	Including non-metered	Potable	0	0	0	0
Groundwater recharge	Long Term Storage	Potable	3,360	3,360	3,360	3,360
Landscape	Recycled Water used inside the City	Non-Potable	3,530	3,992	4,454	4,917
Industrial	Recycled Water used at Roseville Energy Park	Non-Potable	499	564	630	695
Sales/Transfers/Exchanges to other Suppliers	Recycled Water sold outside the City	Non-Potable	350	396	442	488
Sales/Transfers/Exchanges to other Suppliers	Raw Water, Discharge to Linda Creek[2]	Non-Potable	350	350	350	350
		Subtotal Potable	56,179	58,214	60,061	61,529
		Subtotal Non-Potable	4,729	5,303	5,876	6,451
		Total	60,908	63,517	65,937	67,980

NOTES: All volumes are in AF. Sales/Transfers are ideally balanced between intake and outgoing wheeled water, so the anticipated value is shown as 0 for subsequent years.
[1]Breakdown of projected use has been determined by proportional division of annual totals according to recent trends in meter data. Annual totals have been determined by the application of Unit Demand Factors to parcel data. Commercial totals have been adjusted above existing data to account for projected New Technology Industries. Water loss has been projected to match compliance with Roseville's 2028 target to reduce loss to 22.8 gallons per connection per day.
[2]Water discharged to Linda Creek is based upon a supplemental flow requirement and creek conditions; therefore, it will vary year over year. The above value of 350 AF represents an average between 2015 and 2025.

Total Gross water use projections, inclusive of recycled water, are provided in COR Table 4-D and DWR Table 4-2 (cells highlighted in green) above. Recycled water demand is further characterized in DWR Table 6-4 of Chapter 6.

4.2.6 Distribution System Water Losses

Distribution system water losses are the difference between the volume of water that is delivered into the potable drinking water distribution system and actual consumption. Losses are always present in a water system due to

pipe leaks, unauthorized connections or use, faulty meters, and unmetered institutional and governmental water use. Each year the City characterizes its water loss in accordance with the American Water Works Association (AWWA) Water Audit Method. CWC requires urban retail water suppliers to conduct and submit validated water loss audit reports annually to DWR on December 31st following the reporting year. Final Water Audit and Validation Reports are available for 2021 through 2024 and are provided in Appendix D. Distribution system water losses for five years preceding the plan update from 2020-2024 are summarized in COR Table 4-E. The submittal status of Water Loss Audit Reports to the DWR Water Loss Audit Program for the same five years can be found in DWR Table 4-5.

COR Table 4-E 12 Month Water Loss Audit Reporting for 2020-2024

Reporting Period Start Date (mm/yyyy)	Volume Water Loss (AF)
01/2020	1,089
01/2021	712
01/2022	1,663
01/2023	1,797
01/2024	2,524

DWR Table 4-5

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)
3110008	2020	Yes
	2021	Yes
	2022	Yes
	2023	Yes
	2024	Yes
NOTES: 2025 AWWA Audit is not due to DWR until December 31, 2026, and therefore has not been included here.		

An update to the CWC requires that 2020 UWMPs and all UWMPs submitted thereafter include data showing whether the urban retail water supplier met the distribution loss standards enacted by the California State Water Resources Control Board (SWRCB) pursuant to Section 10608.34. The apparent (administrative or data-based) and real water loss standards established by the SWRCB that are to be met by the City by 2028 are 8 gallons/connection/day and 22.7 gallons/connection/day respectively. See Appendix E for the SWRCB's Calculated Water Loss Standards for the City of Roseville. Progress towards the 2028 water loss standards is reported in DWR Table 4-6. Water loss in gallons/connection/day for 2020 through 2024 is shown in COR Table 4-F.

DWR Table 4-6

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)	Real Water Loss					Apparent Water Loss				
		State Water Board Standard		Most Recent AWWA Water Loss Audit		Real Water Loss Per Unit per Day	State Water Board Standard		Most Recent AWWA Water Loss Audit		Apparent Water Loss Per Unit per Day
		2028 Real Water Loss Standard per Unit per day	Units for Real Water Loss	Number of Units (Connections or Miles corresponding with units selected)	Volume of Total Real Loss (from AWWA Water Loss Audit) (AF)		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)	
3110008	Yes	22.7	Gallons per Service Connection per Day (GPSCD)	52102	2098.7	36.0	8	Gallons per Service Connection per Day (GPSCD)	52102	425.7	7.3
NOTES: Data above is from 2024, the most recently completed and submitted AWWA Audit.											

COR Table 4-F Loss Reported in AWWA Water Audit for 2020-2024.

AWWA Loss Category	2020	2021	2022	2023	2024
Apparent Loss	8.23	8.09	7.47	7.23	7.29
Real Loss	12.08	5.17	22.53	16.54	35.96
Water Loss	20.31	13.26	30.00	23.77	43.25
NOTES: All values are gallons per connection per day.					

The data from 2020 through 2024 demonstrate that the City's water loss (measured as gallons per connection per day) has fluctuated year by year. The City continues to prioritize and allocate resources to detecting and repairing leaks in the distribution system to reduce water loss. Over the last ten years, the City has also increased the accuracy of reported losses by discovering better ways to quantify and examine loss, as well as the measurement points within the system that support this quantification. In dedicating resources to tracking and understanding internal unmetered uses, identifying less accurate meters, and understanding consumption of water for authorized uses, the City continues to improve their understanding of water loss. While there are necessary improvements that need to be made, the City anticipates that it is on track to meet the performance standard by 2028.

Note that in DWR Table 4-2 the projected water loss from 2030 through 2045 was calculated by multiplying the performance standard by the estimated number of service connections. The number of service connections was estimated using the same ratio of 2025 total number of service connections to 2025 population.

4.2.7 Estimating Future Water Savings

As noted in DWR Table 4-2 and the following DWR Table 4-3, water use projections do consider future water savings and lower income residential demands.

DWR Table 4-3

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.	4.2.7.1 4.2.7.2 4.2.7.3
Are Lower Income Residential Demands Included In Projections? **Drop down list (y/n)**	Yes
If the method for accounting Lower Income Residential Demands has been included, provide page number where this accounting can be found.	4-13

The unit demand factors and resultant demands calculated by the EU department in COR Table 4-B and COR Table 4-C do not account for reduced demand from passive conservation by the public. However, based on previous years' demand data, the City has observed that passive conservation measures can result in a significant amount of efficiency. This passive demand reduction is not reflected in DWR Table 4-2 in order to support a conservative analysis with unconstrained demand represented for the potable water use categories of Commercial, Industrial,

Institutional/ Governmental, Multi-Family, Single Family, and Landscape. Conservation measures are described in the subsequent sections.

4.2.7.1 Compliance with Water Efficient Landscape Requirements

New development areas are required to reduce landscape area and calculated water demands as part of the process for land use approval, as required by the California Code of Regulations Title 23, Division 2 Chapter 2.7 Model Water Efficient Landscape Ordinance (MWELO). The City of Roseville previously developed its own standards but has more recently adopted the state of California's MWELO standards in 2026.

4.2.7.2 Increased Utilization of Recycled Water

The City of Roseville requires recycled water to be used in most land use development areas currently being planned and for construction water during drought years. Future required use includes landscaping associated with commercial, industrial, multi-family, parks, and transportation corridors. Guidelines for Recycled Water Service are outlined in Roseville Municipal Code Chapter 14.17 (available via City's website at https://qcode.us/codes/roseville/).

4.2.7.3 Implementation of Low Water Use Fixtures

Section 16.04.100 (A.) of the Roseville Municipal Code states that: "The 2019 California Building Standards Code is hereby adopted by the City of Roseville Municipal Code." The Roseville Municipal Code is available via the City's website at https://qcode.us/codes/roseville/.

Additionally, the mandatory California Green Building Standards Code (CALGreen) promotes conservation through the use of appliances and fixtures such as high-efficiency toilets, faucet aerators, and on-demand water heaters.

4.2.8 Characteristic Five-Year Water Use

The California Water Code Section 10635(a) requires that in addition to calculating water use projections over the next 20 years in five-year increments, suppliers perform a drought risk assessment lasting five consecutive years. The projected unconstrained demand for 2026-2030 is estimated in COR Table 4-G. Unconstrained demand is demand absent any water supply or usage restrictions but does include the conservation practices for new construction, outlined in the previous section. This projection informs the drought risk assessment, which is detailed in Chapter 7.

COR Table 4-G Five consecutive year unconstrained demand.

Gross Water Use	2026	2027	2028	2029	2030
Potable Water, Raw, Other Non-Potable	37,130	41,980	46,829	51,679	56,529
Recycled Water Demand	3,882	4,006	4,131	4,255	4,379
NOTES: All volumes are in AF.					

4.3 Water Use for Lower Income Housing

Policy LU5.5, of the Land Use Element, strives to uphold the City of Roseville's Affordable Housing Goal by requiring that a minimum of 10% of all new housing units cost no more than 30% of the total monthly income of very low-, low-income, and moderate-income households. The City of Roseville EU Department annually coordinates with the Planning Division to gather data related to low-income housing metrics. The total number of affordable housing units in 2025 was 3,133, of which 1,872 were single family residences and 1,261 were multi-family

residences. The water demands for low-income housing for 2025 were estimated by multiplying the number of single family and multi-family affordable housing units by the average unit demand factor for low to medium density residential and high density residential, respectively. These estimations are summarized in COR Table 4-H.

COR Table 4-H 2025 Affordable Housing Water Use

Unit Demand Factors	
Average Low to Medium Density Residential Factor for Single Family Units	378 (gpd/DU)
Average High Density Residential Factor for Multi-Family Units	235 (gpd/DU)
2025 Affordable Housing Water Use	
Single Family Residential	793 (AF/yr)
Multi-Family Residential	332 (AF/yr)
Total	1,125 (AF/yr)

As stated in DWR Table 4-3, the water use projections of DWR Table 4-2 are inclusive of water use for lower income households. The estimated water demand by sector for each specific plan, in COR Table 4-C, included affordable housing water use in the single family and multi-family water use calculations, which was used to derive the water use projections in DWR Table 4-2. The portion of water from those projections to be used by affordable housing units is shown in COR Table 4-I. As 10% of all new housing construction is required to be allocated to affordable housing, 10% of the difference between each of the five-year projections was added to the preceding period to estimate how much water would be used by low-income housing.

COR Table 4-I Affordable Housing Water Use Projections

Housing Type	2030	2035	2040	2045
Single-Family Residential	2,038	2,150	2,253	2,336
Multi-Family Residential	449	459	469	476
Total Affordable Housing Units	2,487	2,609	2,721	2,812
NOTES: All values are in AF/yr.				

4.4 Climate Change Considerations

All projections included in Chapter 4 are representative of unconstrained demand except for passive conservation efforts described in Section 4.2.7. However, consideration of effects that climate change may have on demand projections and water supply and reliability is a critical aspect of ensuring that the City is well positioned to meet future demands. The City's primary water source is surface water from Folsom Reservoir, and the City recognizes that the reliability of this source is reduced during dry years or drought. A comprehensive study aimed at understanding how climate change will impact the American River Basin, from which the City receives its surface water supplies, was performed in 2020 and is included in Section 6.14.2. The effects of climate change on water supplies are considered in future plans for the ASR program, a drought risk assessment, and a Water Shortage Contingency Plan**,** which are provided herein.

Chapter 5 SBX7-7 Baselines, Targets, and 2020 Compliance

With the adoption of the Water Conservation Act of 2009, also known as Senate Bill X7-7 (SB X7-7), the State of California was required to achieve a 20% reduction in urban per capita water use by December 31, 2020. Additionally, incremental progress towards meeting the goal was required to be demonstrated in the 2015 UWMP. The 2015 UWMP calculated gallons per capita per day (GPCD) water use and confirmed that the 2015 interim target was met, and that progress was being made toward meeting the water use target for 2020. This chapter summarizes baselines and targets, which were quantified in previous UWMPs, and confirms that the City's water use in 2020 was compliant with SB X7-7 legislation and remains compliant now in 2025.

5.1 Baselines and Targets

The City first addressed SB X7-7 in the 2010 UWMP, where baseline per capita water use, the 2015 interim target, and 2020 target were established and adopted. For the 2015 UWMP update the Department of Water Resources issued guidance that there were significant discrepancies between the estimated 2010 population and the 2010 population as determined by the 2010 U.S Census, which could result in poor baseline population estimates. Consequently, the City and other water suppliers were required to recalculate baseline population that had been reported in the 2010 UWMP and to modify the 2015 and 2020 targets accordingly.

SB X7-7 requires each urban water retailer to determine their baseline daily per capita water use measured in GPCD, over a 10-year or 15-year baseline period. The 10-year baseline period is defined as a continuous 10-year period ending no earlier than December 31, 2004, and no later than December 31, 2010. SB X7-7 also defines that for suppliers which met a minimum of 10% of their 2008 water demand through recycled water that the baseline could be extended to a maximum of a 15-year baseline period. Only 8.76% of the City's demand was met with recycled water in 2008; consequently the City used a 10 consecutive year period for its baseline. Additionally, SB X7-7 required that a 5-year baseline per capita water demand be calculated over a 5 consecutive year period ending no earlier than December 31, 2007, and no later than December 31, 2010. Given the requirements the City used the following baseline periods:

- 10-year Baseline Period: 1995-2004
- 5-year Baseline Period: 2003-2007

Between the 2015 and 2020 UWMPs, the City experienced no changes to the service area that would require recalculation of baseline or targets for 2020; there were annexations for new construction, but these did not trigger recalculation requirements. Baselines and targets presented in the 2020 UWMP are summarized in 2020 DWR Table 5-1. The historical 2015 SB X7-7 Verification Form, which provides tables for detailed calculations of baselines and targets, is provided in Appendix F.

2020 DWR Table 5-1

Submittal Table 5-1 Baselines and Targets Summary from SB X7-7 Verification Form				
Baseline Period	Start Year	End Year	Average Baseline GPCD	Confirmed 2020 Target
10-15 year	1995	2004	309	247
5 Year	2003	2007	295	

5.2 Compliance Daily Per-Capita Water Use

The 2020 compliance daily per capita water use (in GPCD) was calculated in accordance with Methodology 4 of DWR's *Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use* document. The SB X7-7 Compliance Form is a set of tables containing calculations demonstrating that the City met the 2020 target and achieved a 20% reduction from its baseline and is provided in Appendix G. Confirmation of current compliance is summarized in 2025 DWR Table 5-1 which shows that the City did in fact achieve Targeted Reduction for 2020.

2025 DWR Table 5-1

Submittal Table 5-1 Retail: SB X7-7 2020 Target Progress Water Code Section 10608.40						
Was Supplier part of a merger or consolidation since 2020?	Regional Alliance Target or Individual Target?	2020 Target	Actual 2020 GPCD	Did Supplier Achieve Targeted Reduction for 2020?	**Only for suppliers that did not meet the Target in 2020**	
					Actual 2025 GPCD (From SB X7-7 Compliance Form)	Did Supplier meet the 2020 Target in 2025?
No	Individual Target	247	203	Yes		NA

5.3 Regional Alliance

The City has complied with SB X7-7 and UWMP requirements as an individual supplier and had elected to not participate in a Regional Alliance.

Chapter 6 Water Supply Characterization

This chapter catalogues and describes the various water resources and supplies available to the City of Roseville including contract supplies from other agencies, surface water, groundwater, storm water, wastewater, and recycled water, as well as water transfers. The supply source, origin, quality, quantity, and impacts of climate change on availability for each source are discussed within this section.

6.1 Surface Water

The City's primary water supply contracts are and have historically been comprised of high-quality surface water received through Folsom Reservoir according to the terms of the City's water supply contracts with the US Bureau of Reclamation (USBR) and Placer County Water Agency (PCWA). Since these supplies are not considered self-supplied and are instead purchased through other agencies, they are described in Section 6.2 Purchased and Imported Water.

6.2 Purchased and Imported Water

The City has historically relied heavily on its water supply contracts with the US Bureau of Reclamation and PCWA. Together, these untreated surface water contract entitlements for American River water total 66,000 acre-feet per year (AF/yr). Over the coming 10 years, an additional 10,000 AF of contract entitlements will become available through the PCWA agreement, in two 5,000 AF increments which take effect in 2030 and 2035 respectively. The City's current contract supplies are outlined in COR Table 6-A.

COR Table 6-A Surface Water Supply Summary

Contract Supply	Supply Type	Quantity	Availability
USBR	Raw Surface Water	32,000 AF	Subject to CVP M&I Usage Policy [1]
PCWA	Raw Surface Water	34,000 AF (current) – 44,000 AF (future)	Most Year Types [2]
NOTES: [1]The City's USBR Supply is subject in any year to determinations of allotments based on unimpaired inflow to Folsom Reservoir and downstream operations. [2]The City's PCWA Supply will go down to 30,000 AF during any given Dry Year.			

Water supplies from the two source agencies outlined above are received through the same point location at Folsom Dam. Folsom Reservoir has been the primary source of water supply for the City of Roseville since 1971. Surface water from the American River is collected and diverted at the Folsom Reservoir Pumping Plant located at Folsom Dam. The City receives supplies from its two surface water contract entitlements through the Folsom Reservoir Municipal and Industrial (M&I) Intake at this facility.

Untreated water supplies received at this point are conveyed by gravity or pumped by USBR depending on reservoir level through two parallel pipelines (84-inch and 72-inch) to the City's Barton Road Water Treatment Plant (BRWTP), with a capacity for treatment of volumes up to 100 MGD. The 72-inch pipeline was constructed in 2010 to increase redundancy and reliability of this critical supply route, in partnership with San Juan Water District. Additionally, the City has 18 intertie facilities with neighboring agencies through which water supplies may be transferred under normal water year conditions as well as emergency or drought conditions. The City is actively

engaged with PCWA to increase system connectivity and facilitate future transfer of increased volumes of raw and treated water directly through existing and/or new intertie facilities.

6.2.1 Contract Supplies – Vulnerabilities and Restrictions

The City's contract supply with the USBR as part of the Central Valley Project is subject to yearly assignments based on each year's hydrologic conditions. Each year the City is informed in April of the determined percentage allotment of the full 32,000 AF allowed by the contract terms. This determination is made based on the unimpaired inflow of runoff into Folsom Reservoir. This supply is therefore highly vulnerable to climate change and its impacts on rainfall and snowpack conditions upstream of Folsom Reservoir in the Sierra Nevada Mountains. In recent years, this allotment has varied significantly on an annual basis, and the City has undertaken dedicated efforts to examine alternatives for increasing water supply reliability in all year types.

A minimum of 30,000 AF of the City's contract supply with PCWA is available in all hydrologic year types; it is also conveyed from the Middle Fork Project (MFP) through Folsom Reservoir and received as raw water at the same diversion point at Folsom Dam. A previous contract with San Juan Water District (SJWD) for 4,000 AF was dissolved and incorporated into the PCWA contract, contributing to the updated total supply. The City has since amended this contract agreement with PCWA to reflect a current standard availability of 34,000 AF, with an additional 10,000 AF to become available according to the schedule shown below in COR Table 6-B. At this time, there are provisions for the purchase and delivery of an additional 10 MGD or 11,200 AF of treated water from PCWA in emergency conditions, only when supplies are not available through the Folsom Dam Diversion. Additionally, this emergency supply would only be available to the City if both City and PCWA customers achieved 20% conservation. The partners are exploring further improvements to existing intertie facilities to expand and diversify opportunities for the transfer of supplies not dependent on the diversion facility at Folsom Dam.

COR Table 6-B PCWA Future Water Entitlements

Supply Type	Effective Dates	Quantity in Most Years	Quantity in Drier Years
Emergency Treated Water	After May 17, 2023	0 MGD	10 MGD
Raw Surface Water	Until July 1, 2024	29,000 AF	29,000 AF
Raw Surface Water	Until July 1, 2029	34,000 AF	30,000 AF
Raw Surface Water	Until July 1, 2034	39,000 AF	30,000 AF
Raw Surface Water	After July 1, 2034	44,000 AF	30,000 AF

The City's surface water supplies are all dependent upon the operation of Folsom Reservoir by the US Bureau of Reclamation; the dam that created the reservoir was originally constructed with a primary purpose of flood control, not water supply, and is still operated according to that primary function. The importance of this facility has led the City to examine options for redundancy, resilience, and/or improvements with respect to the intake, and best practices in terms of management of its other water resources.

The City remains engaged with regional partners in examining ways to increase the resiliency of this critical reservoir and diversion location. The City acknowledges the vulnerability of the intake elevation at Folsom Dam to the effects of extreme drought. The existing facilities cannot deliver peak season demands when the reservoir

level drops below 391 feet in elevation and cannot deliver any water when reservoir levels drop below an elevation of 310-ft. To address the potential loss of supply during low reservoir level conditions, Reclamation and the City of Folsom have successfully implemented a temporary floating pump system that can provide 30 cfs of emergency backup delivery to only Folsom and Folsom Prison. A 36-inch tap in penstock No. 1 can provide 75 cfs emergency pump station (E-pump) for water deliveries to SJWD and Roseville. In the event that the intake is exposed by an extremely low reservoir level, beyond what is described above, the City would not be able to receive supplies through either of its primary supply contracts. The City has elected to examine this "dead pool" condition as part of this UWMP in Chapter 7.

6.2.2 Water Forum Agreement

The City is a member of the Sacramento River Forum and a signatory to the Water Forum Agreement (WFA). Accordingly, the City has historically agreed to limit its diversions from the upper American River to 58,900 AF/yr during Normal and Wet water years, and to between 58,900 AF/yr and 43,800 AF/yr in Drier and Driest water years. The City is responsibly committed to the Water Forum Agreement but maintains the position that "By instituting programs to conserve water, it abandons no right, title or interest in or to any City water rights, contractual entitlements or any appurtenant rights necessary to exercise such water rights or entitlements," as described by Resolution No. 09-64, Declaring an Intent to Retain Control of Conserved Water (Appendix H). The City executed an update to this agreement in May of 2026. At this time, no further limitations will be applied to the City's available contract supply as a result of this update.

6.2.3 ARTESIAN Project Agreement

Since the last UWMP update, the City has entered an agreement, executed on June 30, 2023, with the American River Terms for Ecosystem Support and Infrastructure Assistance Needs (ARTESIAN) Project. This Project and its associated agreement are a regional initiative managed by the Sacramento Regional Water Authority (RWA). It governs state funding for early implementation of voluntary agreements, aiming to enhance water supply reliability and ecosystem health in the Sacramento region. This project provides funding for the City's ASR Program, specifically ASR and production well development, and therefore the City has committed to making 4,460 acre-feet (AF) of water available regionally through groundwater substitution/replenishment in any given "call year." A "call year" is a year type defined in the agreement where outflow through groundwater replenishment is "called for" based on conditions, typically in three out of eight dry or critically dry year types. The agreement's call years begin in 2025, with potential for further implementation in dry years between 2033 and 2036 if necessary. This initiative helps the City, in coordination with the RWA, replenish the local aquifer to ensure long-term water reliability.

6.2.4 Other Available Water Purchases

The City may purchase supplemental water supplies from the Bureau of Reclamation (USBR), including Article 3F water and Section 215 water, when available. These supplies are intermittent in nature and generally are only available during the winter and spring months, when excess or unmanaged flows are present in the system. Article 3F water consists of excess flows released by the USBR beyond the entitlements of downstream users, while Section 215 water is defined in the Reclamation Reform Act of 1982 (RRA) as un-storable irrigation water released due to flood control requirements or unmanaged flood flows. The City entered into the Section 215 Contract

Agreement with the USBR on March 15, 2023 (Contract No. 23-WC-20-6073), which provides a mechanism to access Section 215 supplies when available.

When available, these supplies can be used to support the City's Aquifer Storage and Recovery (ASR) program for groundwater recharge, consistent with the City's objectives to enhance water supply reliability and support regional conjunctive use. The City exercised the Article 3F option in 2019, acquiring approximately 950 AF and the Section 215 option in 2023, purchasing approximately 1,865 AF. The City has not utilized Article 3F supplies since the last UWMP.

6.3 Groundwater

In recent years, the City has taken significant steps to expand and strengthen their ASR Program to broaden the City's water supply portfolio. The City currently owns and maintains 7 operational groundwater wells. Six of the 7 operational wells are capable of Aquifer Storage and Recovery whereby treated water can be injected into the underlying aquifer for later extraction and use. Two more wells with ASR capabilities are currently under construction and are slated for completion in the Fall of 2026. The City also plans to construct 2 additional wells with ASR capabilities by 2030.

Groundwater is considered to be available for use as part of Roseville's water supply portfolio in supply emergencies or extreme drought scenarios.

6.3.1 Groundwater Basin Description

The City is located over the North American Subbasin of the Sacramento Valley Groundwater Basin. The North American Subbasin (DWR Groundwater Basin Number 5-21.64) is located in the eastern central portion of the Sacramento Groundwater Basin, encompassing portions of Sutter, Placer, and Sacramento Counties. As of 2025, the Basin is listed by DWR as high priority in large part due to the population in the basin and existing and projected future groundwater use, but the basin has neither been adjudicated nor is it considered in overdraft or critical overdraft conditions.

Groundwater elevations in the subbasin along the Placer/Sacramento County line declined at a rate of 1 to 1.5 feet per year for multiple decades until approximately the mid-1990s. Some of the largest decreases have occurred in the area of the former McClellan Air Force Base. From 1995, groundwater elevations stabilized, and the declining elevation trend was dampened due to groundwater management activities stemming from the Water Forum Agreement restraining further increases in groundwater pumping and implementation of in-lieu banking in the region. Groundwater elevations in Sutter and northern Placer counties generally remain stable, although some wells in southern Sutter County have experienced declines.

In addition, the subbasin has historically been pumped by agricultural and urban users. Recently, in some areas of the subbasin, agricultural land has been and is being developed and converted to urban uses. At this time, the subbasin is operating within the current estimate of sustainable yield.

6.3.2 Groundwater Management

The City actively manages groundwater resources both internally in coordination with land use planning and growth projections as well as regionally in accordance with the provisions of the Sustainable Groundwater Management Act. These efforts are discussed in the following subsections.

6.3.2.1 Western Placer County Groundwater Management Plan

The Western Placer County Groundwater Management Plan (WPCGMP) is a foundational document, originally adopted in 2007, to sustainably manage the North American River Groundwater Sub-basin (NASb). It was developed by a partnership including the cities of Roseville and Lincoln, Placer County Water Agency (PCWA), and California American Water Company. As of January 2022, this effort evolved into a mandated Groundwater Sustainability Plan (GSP) under the Sustainable Groundwater Management Act (SGMA) to prevent overdraft and ensure long-term water reliability. The GSP can be accessed, along with a schedule of public hearings, at www.nasbgroundwater.org. All GSP Annual Reports can be viewed at the DWR SGMA Portal, located here: https://sgma.water.ca.gov/portal/#gsp .

6.3.2.2 Sustainable Groundwater Management Act (SGMA)

The Sustainable Groundwater Management Act of 2014, or SGMA, was a three-bill legislative package composed of AB 1739 (Dickinson), SB 1168 (Pavley), and SB 1319 (Pavley). The package was passed in September 2014 and contains a framework for sustainable management of groundwater supplies by local agencies, with a limited role for state intervention if local agencies fail to meet the requirements of SGMA. SGMA lays out a process and a timeline for local authorities to achieve sustainable management of high and medium priority groundwater basins throughout the state. It also provides tools, authorities, and deadlines to achieve statewide sustainable groundwater management. For local agencies involved in implementation, the requirements are significant and will take years to accomplish. DWR has the responsibility to evaluate local agency progress, while the SWRCB may intervene if DWR determines that local agencies fail to make progress and achieve the requirements of SGMA. Essentially, local agencies who volunteer to comply with SGMA must form as Groundwater Sustainability Agencies (GSAs) and prepare, adopt, and implement a Groundwater Strategic Plan (GSP) that meets the requirements of SGMA.

More specifically, critical required steps include the formation of GSAs within two years of when SGMA became effective; the adoption of GSPs within 5-7 years depending on the status of the basin in question (in critical overdraft condition or not); and preparation, adoption and implementation of a GSP(s) that achieves the sustainability goal within 20 years of plan adoption.

SGMA applies to basins or subbasins designated by DWR as high- or medium-priority, based on statewide prioritization that uses criteria including population, importance and amount of groundwater pumped, extent of irrigated agriculture dependent on groundwater, and other criteria. DWR's final Basin Prioritization findings indicate that there are 127 of California's 515 groundwater basins and subbasins which are high- and/or medium-priority. These high and medium-priority basins account for 96% of California's annual groundwater pumping and include 88% of the state's population. The priority ranking for the North American sub-basin of the Sacramento Valley groundwater basin is 24 out of the state's 515 basins, with an overall ranking score of 22.5 and a designation of High Priority.

The City is well along the path of SGMA compliance, having joined the West Placer Groundwater Sustainability Agency (WPGSA) consisting of the City of Lincoln, Placer County Water Agency, Nevada Irrigation District, and the County of Placer. The WPGSA is one of a group of five GSAs formed within the North American Subbasin that consist of West Placer Groundwater Sustainability Authority, Sacramento Groundwater Authority, South Sutter Water District, Sutter County, and Recreation District 1001 GSAs. The five GSAs prepared and submitted a joint GSP to DWR on January 24, 2022, prior to the statutory deadline of January 31, 2022 (Appendix I). The GSAs of the North American Subbasin have been working over the last year to update the GSP and to prepare for the Periodic Evaluation to meet the needs of SGMA. The City adopted and began implementation of this plan on December 15, 2021. Due to the City's proactive approach to groundwater sustainability, GSP implementation is highly practical and visible; it is reflected in the ongoing construction and smart operation of ASR and production wells to store and recover water, backed by monitoring and regional coordination.

6.3.3 Historical Groundwater Production

Groundwater wells have historically been used by the City in drought or emergency conditions, with minimal pumping for the purpose of maintenance or demonstration of the City's ASR program. While this remains true, over the last ten years, the City has worked to advance and expand the ASR program to provide additional water supply reliability.

Beginning in 2018, the City began to regularly operate existing groundwater infrastructure specifically by pumping small volumes of groundwater from the City's production wells and serving that water into the distribution system as part of the maintenance plan. In 2022, 2023, and 2025, the City was able to store small quantities of excess surface water through the use of ASR and production wells by injecting that water into the aquifer. As the City continues to develop this program and look to the future of sustainable supply, groundwater pumping patterns will continue to evolve. A summary of the amount of groundwater pumped by the City over the past five years is provided in DWR Table 6-1.

DWR Table 6-1

Submittal Table 6-1 Retail: Groundwater Volume Pumped Water Code Section 10631(4) and 10631(4)(c)							
Groundwater Type	Potable or Non-Potable	Location or Basin Name	2021 (AF)	2022 (AF)	2023 (AF)	2024 (AF)	2025 (AF)
Alluvial Basin	Potable	North American Sub-basin of the Sacramento Valley Groundwater Basin 5-21.64	1472.6	120.6	115.08	119.9	291.5
		Total	1,473	121	115	120	292
NOTES: Water pumped from Roseville water wells does not need to be desalinated.							

6.3.4 Aquifer Storage and Recovery

The City considers development of a diverse and drought resistant water supply portfolio to be of the greatest importance. To this end, the City has invested in both planning and capital improvements to develop their Aquifer Storage and Recovery (ASR) Program into a highly functional and critical component of the Water Utility's future. The ASR Program utilizes groundwater pumping infrastructure along with existing water supplies to increase reliability. ASR wells are capable of injecting treated surface water from the distribution system into the groundwater aquifer for later extraction and use. A schematic of wells equipped for ASR within an urban environment, accessing the underlying aquifer for groundwater, is provided in Figure 6-1.

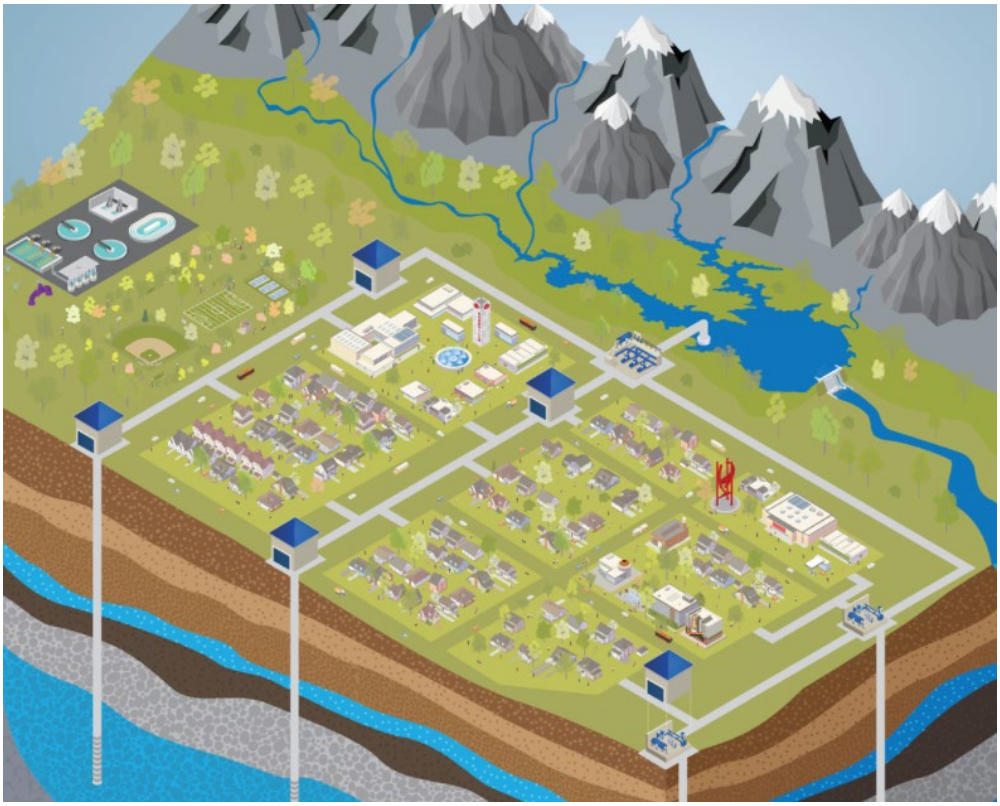


Figure 6-1 Urban Groundwater Infrastructure Schematic

ASR production wells can be used seasonally (i.e. within the water year) or periodically over many years to create a "groundwater bank", storing surface water supplies within the aquifer in times of abundance (wet season or years) for use in times of scarcity (dry season or years). An important component of an ASR Program is to maintain consistent and detailed records of groundwater levels within the aquifer and extraction/injection volumes. This information is used to ensure the groundwater basin is managed sustainably providing water supply reliability benefits while avoiding impacts to the groundwater basin. The City is a committed leader in the region with respect to the development of potential future cooperative water banking and responsible regional resource management.

6.4 Stormwater

At this time, the City does not employ any active stormwater recovery measures. In recent years, the City has invested in studies to determine whether stormwater recapture represents a possible resource for future diversity in groundwater recharge projects. Considerations include water rights, timing and quantity of available runoff, property rights, and water quality, among others. Given the complexity of the issues pertaining to stormwater capture or surface spreading, the City continues to conduct analyses to determine the feasibility of this option in the future.

6.5 Wastewater and Recycled Water

The City currently owns and operates two regional wastewater treatment facilities that treat wastewater flows collected from a combination of the City, South Placer Municipal Utilities District (SPMUD), and some areas of

unincorporated Placer County. This section provides information on wastewater management, as well as its current and potential reuse as a recycled water resource.

6.5.1 Wastewater Collection, Treatment, and Disposal

The South Placer Wastewater Authority (SPWA) was created under a Joint Powers Agreement in October 2000 and is comprised of the City of Roseville, South Placer Municipal Utilities District, and the County of Placer. The SPWA oversees policy for funding regional wastewater infrastructure. The City collaborates with the regional partners on forward planning and best practices for the management of these regional facilities.

The wastewater collection and treatment facilities within the City's service area are maintained and operated by City staff. The wastewater collection facilities outside of the City's service area are maintained by the other SPWA agencies (Placer County and SPMUD). Wastewater outside of the City's service area but within the SPWA Service Area Boundary is conveyed through trunk sewers to the City's wastewater treatment facilities located within the City limits. Metering stations are located at the City's service area boundaries to account for the wastewater entering the City's collection system originating from Placer County and SPMUD collection areas.

The City owns and operates on behalf of the SPWA the Dry Creek Wastewater Treatment Plant (Dry Creek WWTP) and the Pleasant Grove Wastewater Treatment Plant (Pleasant Grove WWTP). Both plants discharge tertiary treated wastewater to surface water. Dry Creek WWTP discharges to Dry Creek while the Pleasant Grove WWTP discharges to Pleasant Grove Creek. The two wastewater treatment plants serve an area that extends beyond the City boundaries.

The Dry Creek WWTP provides tertiary-level wastewater treatment. The treatment consists of screening, grit removal, primary clarification, aeration, nitrification and denitrification, secondary clarification, filtration, and ultraviolet disinfection. Disinfected tertiary-treated wastewater from the Dry Creek WWTP meets Title 22 regulations for full, unrestricted use. The current (2025) average dry weather flow (ADWF) is approximately 8.6 MGD, of which approximately 65%, or 5.6 MGD comes from the City of Roseville.

The plant is currently authorized to discharge up to 18 MGD ADWF into Dry Creek under the Municipal General Order. The Dry Creek WWTP discharge is assigned Municipal General Order enrollee number R5-2023-0025-008 and National Pollutant Discharge Elimination System (NPDES) permit No. CAG585001. Per the California Department of Fish and Wildlife (CDFW), the City is required to discharge four million gallons per day to Dry Creek. The Dry Creek WWTP currently (2025) produces 950 AF/yr of recycled water. A portion of recycled water from Dry Creek is discharged into a gravity line that supplies a school and Morgan Creek Golf Course, both of which are located in Placer County, outside the City's water service area. The remainder of recycled water from the Dry Creek WWTP is pumped into the recycled water distribution system and used within the City's water service area.

The Pleasant Grove WWTP currently (2025) treats approximately 8.49 MGD ADWF with approximately 65% or 5.5 MGD coming from the City of Roseville. The Pleasant Grove WWTP provides disinfected tertiary-level treatment through the process of screening, grit removal, secondary aeration, secondary clarification, filtration, and ultraviolet disinfection. The Pleasant Grove WWTP discharge is assigned Municipal General Order enrollee number R5-2023-0025-006 and National Pollutant Discharge Elimination System Permit No. CAG585001. There are no instream flow requirements for Pleasant Grove Creek.

Disinfected tertiary-treated wastewater from Pleasant Grove WWTP meets Title 22 regulations for full, unrestricted use. The Pleasant Grove WWTP currently (2025) produces approximately 2300 AF/yr of recycled water that is pumped into the recycled water distribution system and used within the City's service area boundary.

Pleasant Grove WWTP underwent construction of a major capital improvement project that began in 2019 and was completed in 2023. The project included an increase in treatment capacity from 9.5 MGD up to 12 MGD. Improvements to the treatment process included the addition of primary clarification, waste activated sludge thickening, and anaerobic digestion. This project represents a significant improvement to the capacity of the Pleasant Grove WWTP with important components of long-term resilience and improved efficiency of the City's utilities.

The project also included important improvements that have benefited the environment and have created renewable energy resources. Methane from the anaerobic digestion is converted to a renewable compressed natural gas (CNG) to fuel the City's growing solid waste fleet and fuel new microturbines that generate electricity for plant usage. The project included a receiving facility for energy-dense wastes to enhance methane production.

As previously described, both treatment plants are regional wastewater facilities and as such, wastewater is generated both inside and outside of the City from a combination of residential and non-residential sources. A summary of the volume of wastewater processed at and discharged from each of the City's wastewater treatment plant in 2025 is provided in DWR Table 6-2 and DWR Table 6-3.

DWR Table 6-2

Submittal Table 6-2 Retail: Wastewater Collected Within Service Area Water Code Section 10633(a)				
100%	Percentage of 2025 service area served by wastewater collection system			
100%	Percentage of 2025 service area population served by wastewater collection system			
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?
City of Roseville (Dry Creek Wastewater Treatment Plant)	Metered	7,116	Roseville City Master Reclamation Permit, Place ID 239771	Yes
City of Roseville (Pleasant Grove Wastewater Treatment Plant)	Metered	6,838	Roseville City Master Reclamation Permit, Place ID 239771	Yes
Total Wastewater Received from UWMP Service Area in 2025:		13,954		
NOTES: All volumes are in AF. The top row entry reflects Dry Creek WWTP, and the bottom row entry reflects Pleasant Grove WWTP. Both are listed under a single Master Reclamation Permit which is the only option available in the drop-down menu for this table. Approximately 65% of the flow received at Dry Creek WWTP and 65% of the flow received at the Pleasant Grove WWTP originates in the City's water service area.				

DWR Table 6-3

Submittal Table 6-3 Retail: Wastewater Treatment and Outcomes Within UWMP Service Area
Water Code Section 10633(b)

Wastewater Treatment Plant Name and Place ID Number	Does This Plant Treat Wastewater Generated Outside the UWMP Service Area?	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		Water Recycled Outside of UWMP Service Area		Effluent Discharge that is not a Permitted Recycled Water Use		Required Discharge for Instream Flow		Delivered to Another Entity for Additional Treatment		
				Treatment Level	Volume (AF)	Treatment Level	Volume (AF)	Treatment Level	Volume (AF)	Treatment Level	Volume (AF)	Treatment Level	Volume (AF)	Name of other entity
Roseville City Master Reclamation Permit, Place ID 239771	Yes	7,116	10,948	Tertiary	1,012	Tertiary	301	Tertiary	9614	Tertiary	1464		0	
Roseville City Master Reclamation Permit, Place ID 239771	Yes	6,838	10,520	Tertiary	2,445		0	Tertiary	8207		0		0	
Total		13,954	21,468		3,457		301		17,821		1,464		0	

NOTES: All values are in AF. The top row entry reflects Dry Creek WWTP, and the bottom row entry reflects Pleasant Grove WWTP. Both are listed under a single Master Reclamation Permit which is the only option available in the drop-down menu for this table.

6.6 Recycled Water System

6.6.1 Recycled Water Coordination

The City regards recycled water as a valuable resource that is a key component of the City's overall water supply portfolio. The City operates its recycled water system and program in coordination with its regional wastewater partners, including South Placer Municipal Utilities District and Placer County. The City has been successfully irrigating landscaped areas throughout the City and planning recycled water implementation as part of new development surrounding the City. The City prepared the 2025 Recycled Water Systems Evaluation Report (Appendix J) to position the City for implementing the next phases of recycled water projects as new users within the City come online, and as the various UGA's plan for and install recycled water infrastructure.

The City operates the recycled water program though the requirements of Master Reclamation Permit Order 97-147 (Permit). The Permit implements the reclamation criteria of the City's Title 22 disinfected tertiary recycled water. Current uses of recycled water within the City include irrigation of landscapes and golf courses, industrial cooling for the Roseville Energy Park, and construction purposes such as dust control and soil compaction. Recycled water is also conveyed outside the City's water service area for golf course and landscape irrigation.

The City prepared the South Placer Regional Wastewater 2020 Systems Evaluation Report (Appendix K), which delineates the current and projected service area boundary, including Urban Growth Areas expected to be added in the near future as development continues. The report provides baseline and projected characterizations of its regional wastewater and recycled water systems. The Systems Evaluation Report was updated to address newer annexations by the SPWA partner agencies, planning revisions, as well as changes in wastewater characteristics and flows. Recycled water supplies and availability are directly linked to the planning and operation of the wastewater treatment plants and must be managed and planned in coordination. The City and its SPWA partners continue utilizing recycled water supplies to promote responsible water supply management. Beneficial use of available disinfected tertiary treated Title 22 recycled water allows surface water and groundwater supplies to be applied to potable uses.

All agency elements for a reuse program within the City boundary, including land planning, development, wastewater treatment, and water supply, are a part of the City of Roseville government organization.

6.7 Recycled Water Beneficial Uses

The City's recycled water program predominantly serves landscape irrigation customers. The City currently delivers recycled water to golf courses, parks, schools, and many miles of streetscape for landscape irrigation within the City's potable water service area. The City also provides recycled water to a school and a golf course outside of the City's potable water service area. The City delivers recycled water to the Roseville Energy Park, which is owned and operated by the City of Roseville Electric Utility, for industrial cooling purposes. Landscapes at both regional wastewater treatment plants also use recycled water for irrigation purposes. Recycled water can be used for construction purposes such as dust control and soil compaction.

The current and projected direct beneficial uses of recycled water in the City's water service area are shown in DWR Table 6-4.

DWR Table 6-4

Submittal Table 6-4 Retail: Recycled Water Direct Beneficial Uses Within Service Area Water Code Section 10633 (c), (d), (e)									
Name(s) of Facility/ies Producing (Treating) the Recycled Water:			Dry Creek WWTP, Pleasant Grove WWTP						
Name of Supplier Operating the Recycled Water Distribution System:			City of Roseville						
Use Type	**Potable or Non-Potable** (after treatment if treated)	Additional Information	2025 (AF)	2030 (AF)	2035 (AF)	2040 (AF)	2045 (AF)	**Potential Recycled Water Use**	
								Volume	Narrative page number
Agricultural irrigation	Non-Potable	Parks	5	6	6	7	8	8	
Landscape irrigation (not golf courses)	Non-Potable	Parks	392	456	516	576	636	636	
Landscape irrigation (not golf courses)	Non-Potable	Schools	144	168	190	212	233	233	
Landscape irrigation (not golf courses)	Non-Potable	Streetscape	945	1,101	1,246	1,390	1,534	1,534	
Golf course irrigation	Non-Potable		1,544	1,800	2,035	2,271	2,507	2,507	
Other (Description Required)	Non-Potable	Industrial cooling at Roseville Energy Park	428	499	564	629	695	695	
Other (Description Required)	Non-Potable	Morgan Creek Golf Course	270	314	356	397	438	438	
Other (Description Required)	Non-Potable	Dry Creek School District	31	36	40	45	50	50	
		Subtotal Potable	0	0	0	0	0	0	
		Subtotal Non-Potable	3,758	4,379	4,953	5,527	6,101	6,101	
		Total	3,758	4,379	4,953	5,527	6,101	6,101	0
NOTES: All values are in AF. Values correspond with projections in the 2025 Recycled Water Systems Evaluation for maximum demand, providing a conservative look at potential usage. Roseville's WWTP infrastructure is capable of exceeding the above outlined demands for recycled water production. It's difficult to project the relative timing of usage and supply and so the above values are simply an estimate. Golf course irrigation does not include golf course irrigation outside the City's service area (Morgan Creek Golf Course). Landscape irrigation for schools does not include schools outside of the service area (Dy Creek School District).									

The uses listed in DWR Table 6-4 include use of recycled water supply. Recycled water uses represent demands within the City's service area boundary including all approved specific plans. The 4 million gallon per day required discharge to Dry Creek as an instream flow requirement totaling 4,480 AF/yr is not shown in DWR Table 6-4.

A comparison of the 2025 actual use of recycled water to what was projected for use in 2025 in the 2020 UWMP is provided in DWR Table 6-5.

DWR Table 6-5

Submittal Table 6-5 Retail: 2020 UWMP Recycled Water Use Projection Compared to 2025 Actual Water Code Section 10633(e)		
Use Type	2020 Projection for 2025 (AF)	2025 Actual Use (AF)
Landscape irrigation (not golf courses)	1,446	1,485
Golf course irrigation	1,888	1,544
Industrial use	310	428
Other (Description Required)	378	301
Total	4,022	3,758
NOTES: All values are in AF. Golf course irrigation does not include golf course irrigation outside the City's service area (Morgan Creek Golf Course). Landscape irrigation for schools does not include schools outside of the service area (Dry Creek School District).		

6.8 Actions to Encourage and Optimize Future Recycled Water Use

As of 2025, the peak recycled water production is approximately equal to the peak recycled water demand. For the City to further expand recycled water usage during the irrigation season, additional recycled water must be made available through expansion of operational storage, with the necessary storage volume dependent on projected demand requirements. Therefore, the City will continue to evaluate in-City and regional recycled water demands and consider its ability to develop infrastructure to support recycled water for future projects.

It is the policy of the City that where the use of recycled water is feasible, appropriate, and acceptable to all applicable regulatory agencies, the City will require an owner or customer to use recycled water for approved uses. The City has other methods of encouraging recycled water use including a rate discount and public education. The recycled water rate for customers is currently 64 percent of the potable water rate. The City also implements an extensive public education campaign to educate its customers about the reliability and other benefits of recycled water. Another major benefit to customers of using recycled water is that it can be used reliably in times of drought. In the event the City imposes drought restrictions on uses, such as irrigation and construction, recycled water is exempt from these restrictions. Under certain drought stages, the City would mandate the use of recycled water for construction purposes.

One target of future recycled water use is new development, as stated in DWR Table 6-6. Projections in the 2025 Recycled Water Systems Evaluation report indicate there will be an increase in recycled water use of approximately 2,500 AF over the course of the next 20 years. A major hindrance to expanding use of recycled water in existing developments is lack of infrastructure. Installing new infrastructure in existing areas is exceedingly expensive. The City requires use of recycled water for all commercial irrigation services in newly developed master planned areas. This is feasible because the recycled water infrastructure can be installed as part of the original project. Additionally, the City is considering expanding recycled water distribution to entities both within and outside the potable water service area and is also evaluating potential changes to the Municipal Code that would require “high water users”, such as technology sector data centers, to use available recycled water.

DWR Table 6-6

Submittal Table 6-6 Retail: Methods to Encourage Future Recycled Water Use Water Code Section 10633(f)			
6-15	Provide page location of narrative in the UWMP		
Name of Action	Description	Planned Implementation Year	Expected Increase in Recycled Water Use (AF)
Developer Agreements	Per City of Roseville development standards, recycled water must be incorporated into future construction.	2025-2045	2,500
		Total (AF)	2,500
		Unit Conversion to AF	2,500
NOTES: Consistent with assumptions elsewhere in the UWMP, the City is assuming buildout would occur in 2045. This projected increased value has been assumed to correlate with 2045. The projected value corresponds with the 2025 Recycled Water System Evaluation Report for estimated maximum projected demand.			

6.9 Desalinated Water Opportunities

There are no opportunities for the development of desalinated water within the City's service area as a future supply source. The City is not located near any bodies of water that would allow for the option.

6.10 Exchanges or Transfers

The City maintains an on-demand treated water system that is used for municipal and industrial purposes. The City maintains direct treated water interties with five surrounding jurisdictions, as described in Section 3.1.6. The City can transfer water between jurisdictions through these interties or access water to supplement its distribution system. These facilities are designed to be used for wheeling water through the service area or for demand shortage assistance.

As a condition of the Water Forum Agreement, the City has entered into a re-operation agreement with PCWA for up to 20,000 AF to be used when Roseville's surface diversion is cut back. In general, the agreement calls for PCWA to release up to an additional 20,000 AF to the American River on an annual basis during time of reduced water availability in the system. This water is to maintain flows in the Lower American River (Nimbus Dam to Sacramento River) and therefore is not available for the City's use. This re-operation water is considered a transfer, although the ultimate user of the water, if any, has not been identified as part of the agreement - only that the water would be marketed when it was identified as available. It is possible there could be multiple users as the water will flow to the Delta and theoretically be available to all Delta water users.

Also, as a condition of the Water Forum Agreement, the City has committed not to take the entire amount of contracted water from the Upper American River. The City currently has 66,000 AF/yr of water available through USBR and PCWA supply contracts and a commitment to take no more than 58,900 AF/yr from the American River Watershed. This maximum will increase as 10,000 AF of additional supplies purchased from PCWA become available. However, there is an opportunity to find a long-term transfer for the foregone 7,100 AF/yr with a user

downstream of the confluence of the American and Sacramento Rivers. The Water Code definitions of short- and long-term conditions are that short-term is considered for a period of one year or less and long-term is for a period of more than one year.

6.11 Supply Management

The City has historically relied primarily on their suite of surface water contracts, supplying high quality water through the City-owned Barton Road Water Treatment Plant, and serving the City's population through gravity flow. In most year types, the City will continue to rely primarily on these supply sources for the bulk of potable water supply. Of these surface water contracts, the City employs supplies through the USBR contract as a first priority each year, pulling secondarily from the PCWA contract as needed. Each year allocations from the USBR are subject to variations in allocation, resulting in potential differences in the duration and quantity of supply pulled from this contract annually.

City Water Utility staff plan to utilize groundwater infrastructure differently in Normal and Dry hydrologic years. In general, Roseville plans to use groundwater infrastructure in accordance with sustainable groundwater management goals and objectives. In a Normal year, the City plans to extract no water other than that which is necessary for regular maintenance of the well infrastructure. In critical drought years, the City may find the need to operate its wells to meet demands when significant impacts are seen to surface water supplies. This is outlined further in Chapter 7. As the City continues to install more ASR and production wells within the next 5 years, and beyond, provisions of the municipal code will be updated to reflect the development of groundwater strategy.

6.12 Future Water Projects

The City has taken a proactive approach to ensuring resource diversity with a focus on surface water contracts, strong groundwater infrastructure, and highly collaborative regional presence in water planning and future conjunctive use. Future water supply project opportunities, including diversifying the purchasing or importing of water, expansion of the City's ASR program, and regional cooperative conjunctive use are discussed in the following sections.

6.12.1 Purchased or Imported Water

In addition to the current contract with PCWA for 34,000 AF/yr of surface water, the City has an agreement with PCWA that allows for up to 11,200 AF or 10 MGD of treated water transfer via interties in an emergency drought condition. This additional 11,200 AF would only be available in the condition that no supplies could be taken from Folsom Reservoir due to a "dead pool" condition, or exposed intake, and if both City and PCWA customers were to achieve 20% conservation.

The City is also exploring future opportunities for water transfers with regional partner agencies in an effort to diversify regional water management strategies in conjunction with responsible groundwater management practices.

6.12.2 Groundwater and ASR Program

The City has historically relied upon groundwater resources only as a backup supply in times of shortage. While this remains true, over the last ten years and in response to lessons learned during the 2015 drought, changing climate conditions, and the overall need for further diversity and reliability of water supply, the City has invested

in efforts to expand its ASR program. The City developed a Groundwater Strategic Plan in an effort to evaluate current infrastructure, potential new well sites, further understand the condition and accessibility of the aquifer within the City's service area boundary, and how groundwater planning would look moving forward. The result of these planning efforts had been the identification of 6 future well sites throughout the City's Pressure Zones 1 and 4, with a heavier emphasis on infrastructure in Pressure Zone 1. Conceptual design and siting have been completed for these future well sites, with exploratory drilling. Two of the 6 wells, Westbrook, No. 9 (rated extraction capacity of 2,500 GPM), and Solaire, No. 18 (rated extraction capacity of 1,800 GMP), were constructed over a two-year period and completed in 2023. Two more wells, Campus Oaks, No. 13, and Misty Wood, No. 19, are currently under construction and are expected to be completed in the Fall of 2026. The City is planning to install the last two wells in this current expansion phase of the ASR Program within the next 5 years. All 6 wells, with their top-side improvements and ASR capability, will enhance flexibility of operations and expand the City's conjunctive use capabilities. For planning purposes, each well in or planned for construction is assumed to extract a nominal 2,000 GPM, with a final production value to be determined upon ASR and production well drilling and development. These 4 future wells are expected to represent a total of 10,000 – 13,000 AF/yr of additional water supplies. The City will be initiating work on updating its Ground Water Strategic Plan to access and develop the next phase of its ASR Program expansion.

Six (6) of the City's seven (7) existing wells have ASR injection capability. The City plans for future wells to also be ASR capable. The expected future known water supply programs are listed in DWR Table 6-7.

DWR Table 6-7

Submittal Table 6-7 Retail: Expected Future Water Supply Projects or Programs Water Code Section 10631(f)							
6-17	Provide page location of narrative in the UWMP						
Name of Future Projects or Programs	Joint Project with other suppliers?		Additional Description	**Potable or Non-Potable** (after treatment if treated)	Planned Implementation Year	Planned for Use in Year Type	Expected Increase in Water Supply to Supplier (AF)
	Drop Down List (yes/no)	If Yes, Supplier Name					
Regional Conjunctive Use	Yes	Various	Regional water banking and aquifer storage and recovery projects.	Potable	2030	All Year Types	Unknown
Production/ASR Well Program Expansion	Yes		Development of new production wells with ASR capability for emergency supply resilience.	Potable	2030	Single-Dry and Multi-Dry Year	10,000-13,000 AF
PCWA-Roseville Cooperative Water Reliability Project	Yes	PCWA	Partnership with PCWA to optimize and improve existing interties to increase supply transfer volumes and reliability.	Potable	2030-2045		Not Yet Determined
NOTES: The City's groundwater wells are intended for emergency use only, as may be needed in drought conditions.							

6.13 Summary of Existing and Planned Sources of Water

The City's current planned sources of water can be summarized as such:

- The City is currently contracted with USBR and PCWA to purchase 66,000 total AF/yr of American River water diverted from Folsom Reservoir with certain restrictions (see Chapter 7).
- The City maintains groundwater wells for emergency supply. Six of the City's 7 existing active production wells possess ASR capability. The City has plans to expand its ASR Program.
- The City does not currently use storm water as a potable water offset. The City is investigating future opportunities to use stormwater in other beneficial ways.
- The City currently utilizes and has future plans to expand recycled water usage.
- The City neither currently uses nor plans to use desalinated water.
- The City maintains direct treated water interties with five surrounding jurisdictions for use in emergency or water transfer situations.

The actual 2025 water supplies for the City are summarized in DWR Table 6-8 and the future projected water supplies for the City are summarized in DWR Table 6-9.

DWR Table 6-8

Submittal Table 6-8 Retail: Water Supplies — Actual Water Code Section 10631(b)				
Water Supply	Additional Description	**2025**		
		Potable or Non-Potable (after treatment if treated)	Actual Volume (AF)	Total Entitlement (AF)
Purchased or Imported Water	US Bureau of Reclamation	Potable	29,739	32,000
Purchased or Imported Water	Placer County Water Agency	Potable	2,037	34,000
Supply from Storage		Potable	213	0
Groundwater (not desalinated)	City of Roseville owned ASR and production wells, emergency only	Potable	292	as needed, up to 18,700 AF of capacity
Recycled Water	Recycled water produced by City of Roseville WWTPs	Non-Potable	3,758	as needed
		Subtotal Potable	32,280	66,000
		Subtotal Non-Potable	3,758	0
		Total	36,038	66,000

DWR Table 6-9

Submittal Table 6-9 Retail: Water Supplies — Projected
Water Code Section 10631 (b)

Water Supply	Additional Detail on Water Supply	Potable or Non-Potable (after treatment if treated)	Projected Water Supply							
			2030		2035		2040		2045	
			Reasonably Available Volume (AF)	Total Entitlement (AF)	Reasonably Available Volume (AF)	Total Entitlement (AF)	Reasonably Available Volume (AF)	Total Entitlement (AF)	Reasonably Available Volume (AF)	Total Entitlement (AF)
Purchased or Imported Water	USBR - CVP Contract Supply	Potable	32,000	32,000	32,000	32,000	32,000	32,000	32,000	32,000
Purchased or Imported Water	PCWA - Middle Fork Project Supply	Potable	39,000	27,800	44,000	32,800	44,000	32,800	44,000	32,800
Groundwater (not desalinated)	Groundwater Wells - Emergency Supply Only	Potable	0	29,000	0	29,000	0	29,000	0	29,000
Purchased or Imported Water	PCWA - Emergency Treated Water Transfer[1]	Potable	0	11,200	0	11,200	0	11,200	0	11,200
Recycled Water	South Placer Wastewater Authority	Non-Potable	4,379	0	4,953	0	5,527	0	6,101	0
Other	Water Forum Limitation on American River Supply Diversion	Potable	-7,100	0	-7,100	0	-7,100	0	-7,100	0
Other	Artesian Project Agreement[2]	Potable	-4,460	0	0	0	0	0	0	0
		Subtotal Potable	59,440	100,000	68,900	105,000	68,900	105,000	68,900	105,000
		Subtotal Non-Potable	4,379	0	4,953	0	5,527	0	6,101	0
		Total	63,819	100,000	73,853	105,000	74,427	105,000	75,001	105,000

NOTES: Two supply limitations are shown in the table above to more accurately reflect available supply. Groundwater is used as emergency supply only and therefore are not shown as "reasonably available" but are depicted under available entitlements should they be required in emergency conditions.

[1]Similarly, this PCWA Emergency Treated Water Transfer is only available in the instance that supplies could not be drawn from Folsom Reservoir in a “dead pool” condition and that Roseville customers are implementing significant conservation measures, not in combination with the normal Middle Fork Project supplies. Therefore, in years where the PCWA Emergency Treated Water Transfer is shown, a resulting reduction in the PCWA – Middle Fork Project Supply is shown, as they are not additive. [2] The ARTESIAN Project contract is currently in an initial eight-year cycle that ends in 2032 and has the potential to move beyond that into a four-year contingency phase that would end in 2036.

6.14 Climate Change Impacts to Supply

6.14.1 Local Climate Change Outlook

The City has acknowledged and incorporated lessons learned from the last 15 years of climate related impacts to the reliability of its water supply. Beginning with the extended drought early in the previous decade, culminating with the extreme shortages experienced in 2015, Roseville has seen unprecedented curtailments of water supply and learned how important diversity of sources, diversion locations, and other options become when regular supply is interrupted.

It is expected that regional reductions in Sierra Nevada snowpack may continue and worsen in the coming years, creating uncertainty of surface water supplies – specifically the contract Roseville holds with USBR for 32,000 AF annually which can be curtailed down to 0% depending on each year's hydrologic outcome. Further, in drought years a lack of inflow to Folsom Reservoir can reduce water surface elevations significantly and quickly, with the possibility of exposing the intake facility at the dam, thereby making both the USBR and PCWA surface water contract supplies unavailable to the City.

The City's surface water supplies will be more vulnerable to declining snowpack in coming years, with potential for severe limitations in single dry years as well as periods of persistent drought. Integrating cross-seasonal groundwater management (injecting in times of excess for extraction in times of scarcity) will provide much needed resilience in the face of shifting climate conditions.

With these things in mind, the City has taken steps to strengthen its groundwater infrastructure and work toward a full operational suite of capability including beneficial use (injection) of excess wet season supplies in preparation for seasonal shortages in surface supply should it become necessary. It is important to note that Roseville is not simply planning to draw from the aquifer to offset its surface water contracts during emergencies, but rather that they are making concurrent plans to recharge this aquifer and bank supply before the need arises. It is this type of forward planning that Roseville brings to the regional stage in helping the group of agencies relying on these same supply sources to move toward a more sustainable outlook. Diversity of operations and supply sources allow a more flexible approach to each year's specific hydrologic conditions and water demand.

6.14.2 Regional Climate Studies

In 2020, the American River Basin (Basin) region conducted a climate change study in partnership with local water purveyors and the USBR. The purpose of the American River Basin Study (ARBS or Study), released in August of 2022, was to develop data, tools, analyses, identify supply-demand imbalances, and climate change adaptation strategies specific to the Basin. Under the "new normal" of a changing climate, the ARBS aims to improve the resolution of regional climate change data and to develop regionally specific mitigation and adaptation strategies. As a participant of the study, and service area contained within the Study Area, the following summarizes climate change findings pertinent for the region. More details, along with the approved study, can be found at www.pcwa.net/planning/arbs.

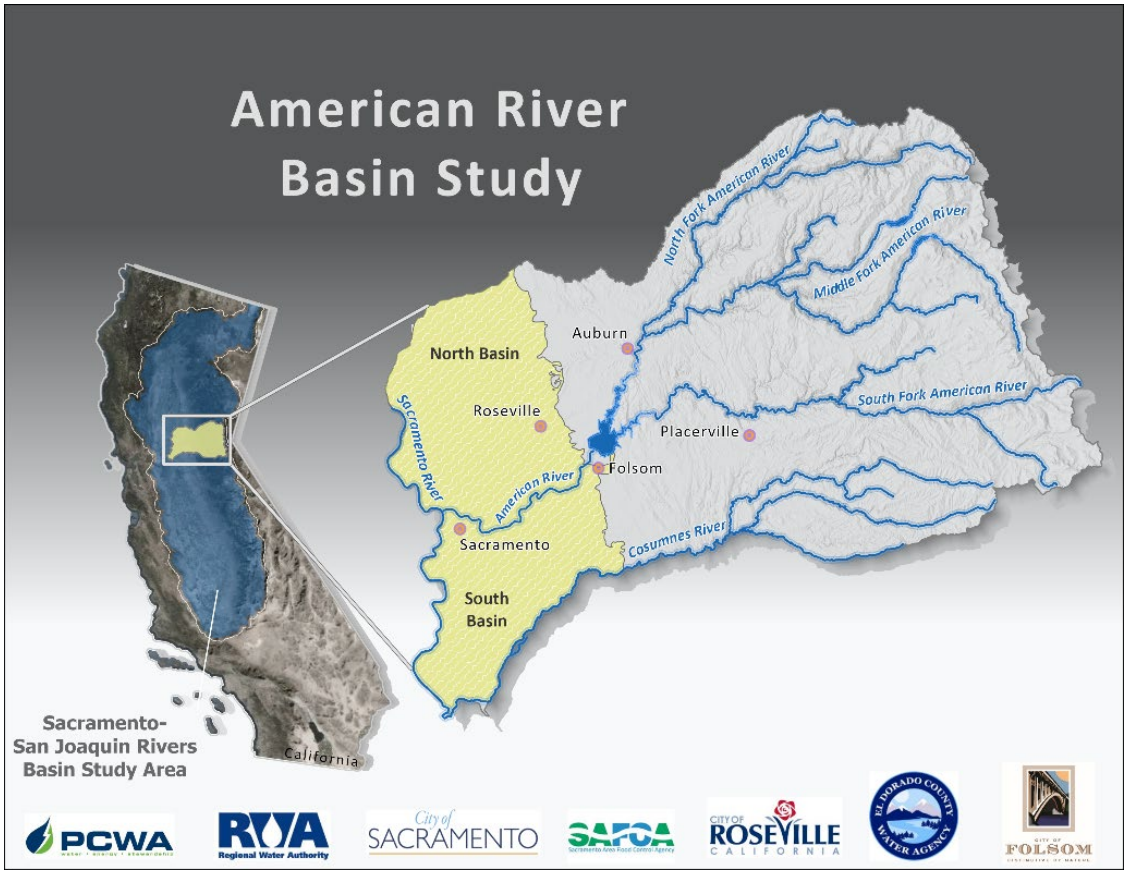


Figure 6-2 American River Basin Study Area

The Study Area is bounded by the Sierra Nevada Mountain range to the east, the Feather and Sacramento rivers to the west, the Bear River to the north, and the Cosumnes River to the south (see Figure 6-2). In addition to the American River Watershed, the Study Area encompasses the North and South American Groundwater Subbasins, and Non-Federal Partners' service areas outside of the American River Watershed.

6.14.3 Projected Future Conditions

Analysis of projected future climate conditions in the American River Basin and development of climate scenarios for the ARBS were based on an ensemble of bias-corrected and spatially downscaled climate projections[2]. This ensemble has been used by the California Water Commission and DWR as the primary source of climate projection information in several recent studies, including the Water Storage Investment Program (WSIP) and California's Fourth Climate Change Assessment (Pierce et.al., 2018). Projected future climate conditions were evaluated and characterized based on the ensemble of downscaled climate projections.

[2] Climate projections were developed using Global Climate Models from the Coupled Model Intercomparison Project Phase 5 (CMIP5) and downscaled using Localized Constructed Analogs (LOCA) method projected and coupled with two future emission scenarios (RCP 4.5 and RCP 8.5) available from Dr. David Pierce at the Scripps Institution of Oceanography.

Hydrology scenarios were used to develop streamflow inputs to CalSim 3.0, a comprehensive water resource model used by the State of California, which was then used to evaluate changes in water supplies, demands, and management throughout the CVP and State Water Project (SWP), including the Study Area. Demands for each water purveyor largely relied upon water purveyor's information provided in Regional Drought Contingency Plan/Regional Water Reliability Plan (RWRP) (Regional Water Authority, 2017) and 2015 UWMPs.

6.14.3.1 Temperature

Surface air temperatures are projected to increase steadily, with average summer temperatures increasing by approximately 7.2 degrees Fahrenheit (°F) by the end of the 21st century (see Figure 6-3), and winter temperatures increasing by 4.9°F. Projections of daily maximum and minimum temperatures suggest similar warming trends during all seasons, with maximum temperatures projected to increase as much as 7.3°F during the summer months.

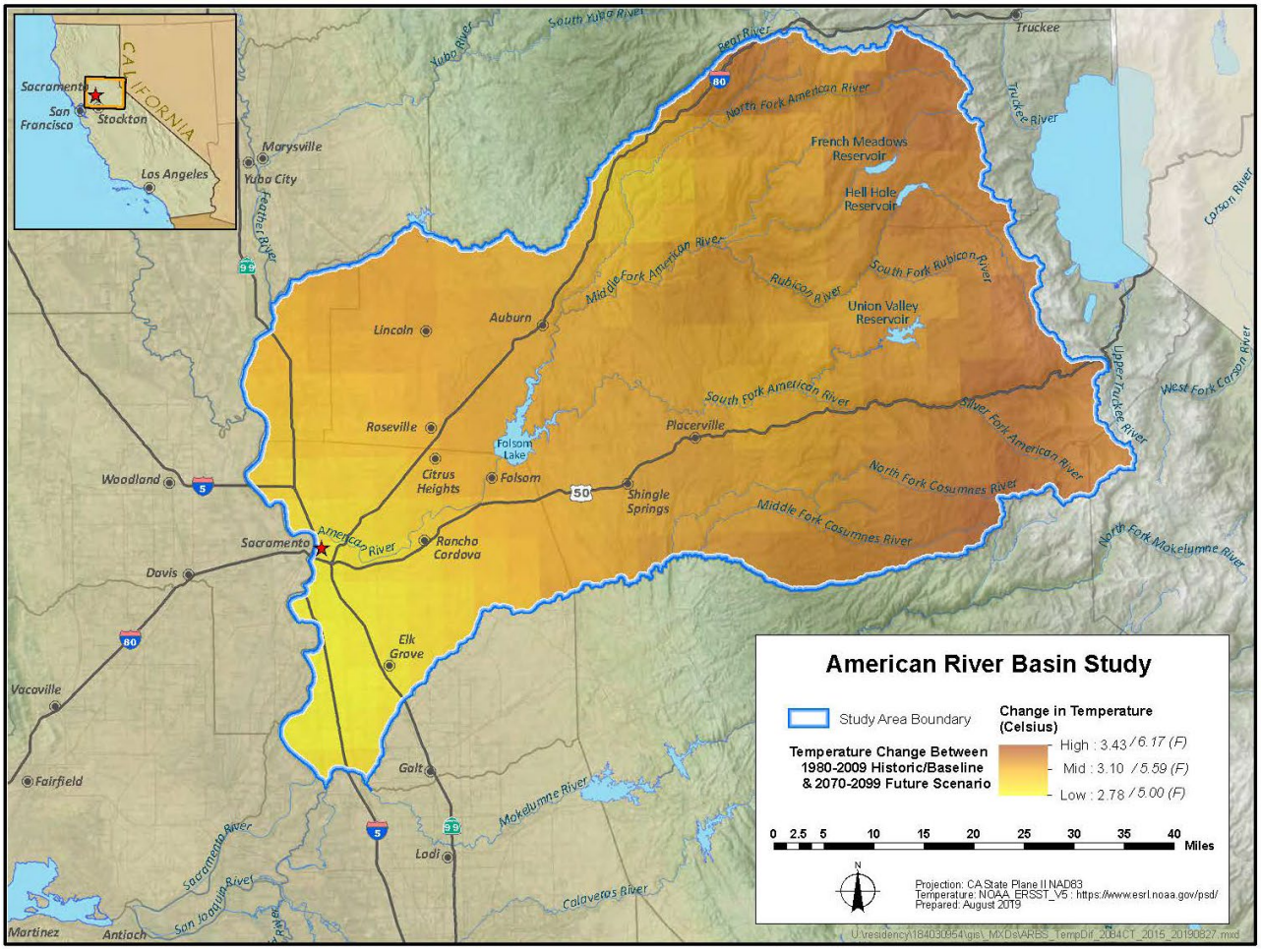


Figure 6-3 Projected Changes in July Temperature between Historical (1980-2009) and End of Century Under Central Tendency Climate Change

6.14.3.2 Precipitation

Annual precipitation projections in the ARBS show no significant trend in the median of change over the 21st century. Many of the available GCM projections show change in precipitation, but there is no consistency in the

magnitude and direction of projected change between models. Approximately half of the projections indicate a minor increase in annual precipitation and half indicate a minor decrease, highlighting the large uncertainty in future precipitation over this region. Although lacking clear trend in projected annual precipitation, by the end of the 21st century the average fall and spring precipitation is expected to decrease, with winter and summer precipitation increasing. Increasing variability is also projected in winter and fall precipitation. A summary of these projections is provided in COR Table 6-C.

COR Table 6-C Projected Change in Precipitation and Temperature Over the American River Basin Study Area Between 1980-2009 and 2070-2099

Season	Percent Change in Basin-Averaged Annual Mean Precipitation (%)	Change in Basin-Averaged Annual Mean Daily Air Temperature (°F)	Change in Annual Mean of Daily Maximum Air Temperature (°F)	Change in Annual Mean of Daily Minimum Air Temperature (°F)
Fall	-6.0	5.8	6.1	5.5
Winter	4.7	4.9	5.0	4.8
Spring	-11.9	5.8	6.3	5.1
Summer	10.4	7.2	7.3	7.0

6.14.3.3 Snowpack

Snow water equivalent (SWE) is a key indicator of water supplies in this region, where runoff is largely influenced by snowmelt. The increasing variability in precipitation combined with increases in surface air temperatures are key drivers in projections of a reduction in annual average SWE. Average SWE is forecasted to decrease by 50-85% across all climate scenarios and future time periods. In addition, areas that accumulate snow above Folsom Reservoir are also projected to have up to a 12-inch decrease in maximum snowpack by end of the century.

6.14.3.4 Evapotranspiration

Potential evapotranspiration (PET) serves as a key indicator of landscape water demands, including consumptive use by evaporation and transpiration from bare soil, water surfaces, native vegetation, and crops. Average annual PET is expected to increase 1.2 to 6.2 inches across all climate scenarios and future time periods. PET is strongly correlated with air temperature and thus expected to increase more under the hot scenarios (HD, HW) than under the warm scenarios (WD, WW).

6.14.3.5 Runoff

Watershed runoff is a direct indicator of local water supply available, as well as to statewide Central Valley Project and State Water Project systems. Climate change projections indicate a pronounced shift in the distribution of runoff from May and June to earlier in the season (December to March), implying a transition in precipitation from snow to rainfall and/or earlier snowmelt and increasing the amount of runoff during the winter months. Peak runoff is expected to shift by more than a month earlier by mid to late century (Figure 6-4). Spring runoff will decrease due to reduced winter snowpack. Similar to the precipitation scenarios, there is large uncertainty in projected runoff where the 'wet' scenarios suggest an increase in annual runoff and the 'dry' scenarios suggest a decrease in annual runoff. The projected changes in basin wide runoff range from an increase of 486 thousand acre-feet (TAF) under the warm-wet scenario to a decrease of 203 TAF under the hot-dry scenario by the end of the century.

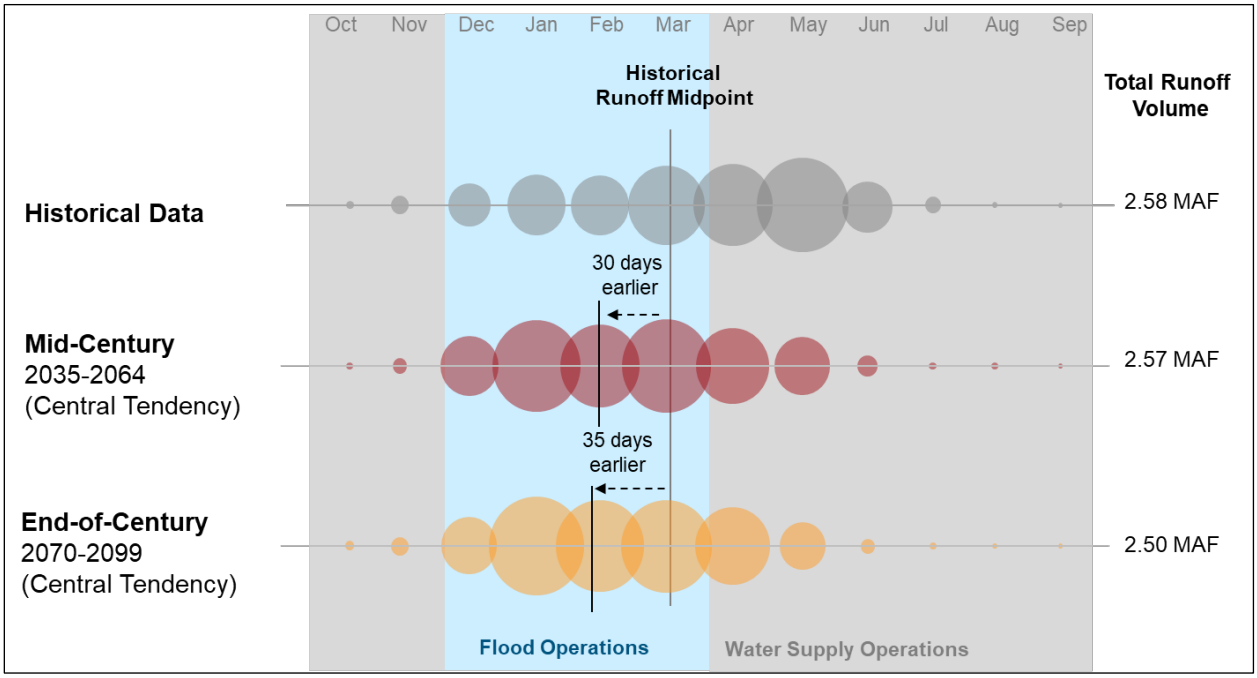


Figure 6-4 Distribution of Average Monthly Runoff for Historical Record (1922-2015) and Future Projections Under Central Tendency Climate Scenario

The change in annual climatic and hydrologic indicators between historical baseline observations (1915 to 2015) and projected future conditions for the ARBS area are listed in COR Table 6-D.

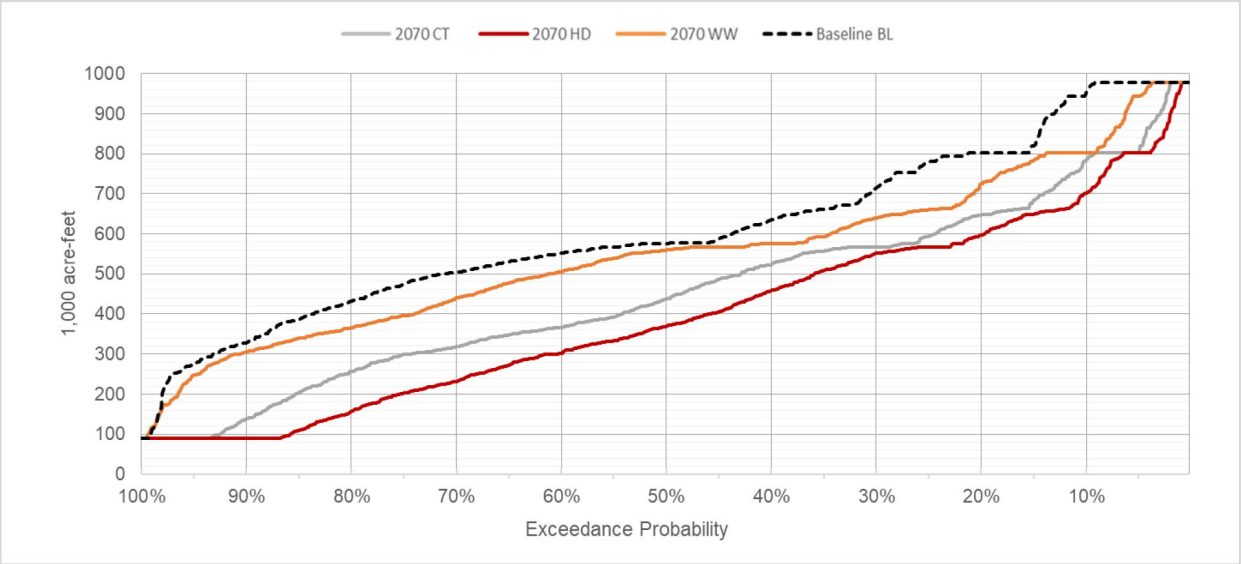
COR Table 6-D Change in Hydrologic Indicators Between Historical Observations and Projected Future Hydrology

Time Period	Climate Scenario	Precip (in)	T_{avg} (°F)	T_{max} (°F)	T_{min} (°F)	PET (in)	SWE_{avg} (in)	SWE_{max} (in)	Runoff (TAF)
1915-2015	Historical Observations	38.2	54.8	67.8	35.6	42.8	1.5	5.7	1,458
2040-2069	Warm-Wet	1.9	4	6.2	1.6	1.6	-0.7	-2.3	701
	Central Tendency	0.1	5	8.1	2.1	2.7	-0.9	-2.8	-2
	Hot-Dry	-2.8	6.2	10.4	2.7	3.7	-1.1	-3.4	-206
2055-2084	Warm-Wet	3.8	4.7	7.4	2	2	-0.8	-2.5	199
	Central Tendency	-1.1	6.3	11.1	2.6	4.1	-1.08	-3.5	-93
	Hot-Dry	-3.4	7.9	13.3	3.7	5	-1.2	-3.8	-185
2070-2099	Warm-Wet	7	5.4	8.3	2.5	1.8	-0.9	-2.9	486
	Central Tendency	-0.6	6.5	11	2.8	3.9	-1	-3.3	-54
	Hot-Dry	-4.6	8.9	15.7	4.1	6.2	-1.3	-4.3	-203

6.14.4 Water Supply Reliability

Changing climate conditions in the Sierra Nevada Mountains threaten the volume of water stored in the snowpack and the timing of runoff entering Folsom Reservoir. Consequently, they can also affect the critical role of Folsom Reservoir in the CVP Operations. Reliance on Folsom Reservoir is expected to increase commensurate with the impact of sea level rise on salinity in the Delta. Modeling of these factors has illustrated that, without operational

adjustments, Folsom Reservoir is projected to have lower end of conservation season (end of September) storage levels and approach "dead pool" more often under most future climate scenarios (see Figure 6-5). Similarly, increased early season runoff would increase flood risks along the Lower American River, leaving less water in the upper watershed available during water supply operations.



Key:
Baseline BL = Historic Conditions, 2070 CT = Central Tendency 2070 Climate Scenario, HD = Hot-Dry 2070 Climate Scenario, WW = Warm-Wet 2070 Climate Scenario

Figure 6-5 Exceedance Plot of Folsom Reservoir Storage (end of September) Under Future Climate Change

Under the 2070 level of development, the ARBS projects a supply-demand imbalance of 63 to 78 TAF/year in the Upper Basin (or Foothills Area) without further conservation or management actions. In the Lower Basin, groundwater extraction is expected to increase by 62 to 155 TAF/year to offset the projected imbalance, which would affect groundwater sustainability.

Based on the water supply and demand imbalance results, the region's water supply reliability has vulnerabilities. The ARBS assessed several adaptation portfolios for addressing the range of vulnerabilities and future supply-demand imbalances for the Study Area for regional benefits. Portfolios analyzed were:

1. Foundational Institutions
2. No Assurances for Long-term CVP Water Contract
3. Alder Creek Storage and Conservation Project
4. Sacramento River Diversion Project
5. Federally Recognized Groundwater Bank (North and South Basin)
6. Folsom Dam Raise with Groundwater Banking (South Basin)
7. Modified Flow Management Standard

The seven formulated adaptation portfolios were quantitatively evaluated using CalSim 3 to alleviate supply-demand imbalances and benefits to the region. The Study's intent was not focused on individual water-supplier's portfolio, but rather how the region could plan to increase regional reliability. The precise composition, scale,

operations, partnerships, funding, and governance to advance these project concepts will require further evaluations and coordination among Basin interests, including USBR, DWR, and SWRCB.

While climate change does have an impact on the basin, impacts are largely seen closer to the end of the century, and not within the timeline of the UWMP. Through proactive adaptation management actions, the Study highlights ways for the region to alleviate climate change impacts by the end of century. Therefore, in consideration of the timeline of the UWMP, the City of Roseville does not reflect any climate change impacts in supply and demand scenarios within this Plan.

6.15 Energy Intensity

A requirement of the CWC, pursuant to 10631.2. (a), is that suppliers must include information that can be used to calculate energy intensity of their water service. Typically, a large portion of energy consumed in municipalities is dedicated to the conveyance, treatment, distribution, and storage of water. Maintaining water systems involves numerous pumps, motors, and other equipment which run for most or all hours of the day year-round. Because the water operations consume a significant amount of energy, these facilities can be a substantial contributor to greenhouse gas emissions in communities. Understanding how much energy is consumed at the City's various facilities is critical to ensure that the City is mindfully and efficiently utilizing energy resources.

An analysis of the energy intensity, which is the amount of energy consumed per volume of potable water supplied, is provided in COR Table 6-E.

COR Table 6-E Energy Intensity Reporting

Start Date for Reporting Period	1/1/2025	Sum of Water Management Processes
End Date	12/31/2025	
Volume of Water Entering Process (AF)		31,893
Energy Consumed (kWh)		2,837,698
Energy Intensity (kWh/AF)		88.98
NOTES: Values include only water management processes that are under the City's operational control.		

The City treats and distributes the majority of its potable supply with the significant aid of gravity flow, from Folsom through the WTP and out into the distribution network throughout the City's service area. Data collected to support the analysis included in COR Table 6-E were primarily sourced from energy consumption billing data for the City's conveyance, treatment, distribution, and storage facilities for potable water. Where data was not available, estimates were made based upon similar facilities as well as calculations proportionate to the volume of water involved in the facility process. Some of the City's conveyance or distribution facilities do not have power sources or are owned by the adjacent utility and therefore do not represent consumption included in the calculation above.

Chapter 7 Water Service Reliability and Drought Risk Assessment

This chapter describes the long-term reliability of the City's water supply portfolio in all hydrologic year types through the year 2045. The City's existing and planned water management strategies and options for increasing the reliability of water supplies are also addressed. Shorter term reliability planning that may require immediate action, such as drought or a catastrophic supply interruption, is addressed in the Water Shortage Contingency Plan.

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 2045.

7.1.1 Legal Constraints

The City does not anticipate legal factors to affect the reliability of recycled water or purchased water supply within the planning horizon of this UWMP.

As of late 2025, the legal constraints governing groundwater in Roseville are primarily defined by the Sustainable Groundwater Management Act (SGMA). While the North American Subbasin is not currently adjudicated—meaning no court-mandated pumping limits exist—it is strictly regulated under the Groundwater Sustainability Plan (GSP) approved by the California Department of Water Resources (DWR) in 2023. The West Placer Groundwater Sustainability Agency (WPGSA) holds the legal authority to monitor well levels, impose fees, and limit extractions to prevent "undesirable results," such as land subsidence or chronic depletion. Currently, the City is fulfilling its legal mandate by participating in the subbasin's first five-year periodic evaluation, with a finalized update due to the state in January 2027. This evaluation focuses on refining Sustainable Management Criteria (SMC) – the specific legal thresholds for water levels and quality – and addressing DWR's recommended corrective actions. To remain compliant with these sustainability goals, Roseville utilizes its Aquifer Storage and Recovery (ASR) program as a regulated "water bank" to stabilize the aquifer, ensuring the subbasin stays on the legally required path to full sustainability by 2042.

7.1.2 Water Quality Constraints

The City's water supply portfolio consists of high-quality surface water, recycled water, and groundwater resources. In some areas of the City, iron and manganese can be found in native groundwater at concentrations both above and below the secondary taste and odor maximum contaminant level (MCL) established for these constituents. The City monitors groundwater quality closely, to ensure water provided for potable use does not exceed these standards.

7.1.3 Physical Constraints

The physical constraints of recycled water, surface water, and groundwater are discussed in the following sections.

7.1.3.1 Recycled Water

Recycled water is physically constrained by flows into the City's wastewater treatment plants and the resulting outflow of treated water. It is therefore seasonally available in higher quantities when demands are lowest during the wet season. The distribution network of "purple pipe" is also a physical constraint for this supply source, as it

only exists in the western portion of the City. Access to recycled water and its availability to offset potable needs are therefore limited by physical access to this pipe network.

7.1.3.2 Surface Water

The City has identified its Folsom Reservoir intake as a likely physical constraint on current surface water supplies. Both of the City's primary surface water contract supplies are received through this point of diversion, making it a critical facility for the reliability of Roseville's surface water supply. If the water level of Folsom Reservoir were to drop close to or below the intake elevation as it nearly did in 2015 (referred to as the "dead pool" condition) the City would not be able to divert water without additional infrastructure. The City is also able to receive supply through interties in emergency conditions; however, the WTP represents the primary diversion point. As a result of this vulnerability and lessons learned in the 2015 drought year when the "dead pool" condition became a real possibility, the City has continued to explore cooperative efforts with Folsom diversion and operation partners to duplicate or lower the intake facility to alleviate this concern. The City recently added the Woodcreek intertie with PCWA to their system and is continuing to examine options for alternate diversion points to increase reliability of physical water supply access.

The capacities of the Folsom Dam diversion, Roseville Water Treatment Plant, and distribution systems are sufficient to divert, treat, and convey the projected surface water demands. A 150 cubic feet per second (cfs) capacity limitation at the USBR pumping plant, which was agreed to based on recent pumping plant improvements, is sufficient to provide water to meet the City's needs.

7.1.3.3 Groundwater

The physical constraints on the current groundwater supply are the pumping capacities of existing wells. The total pumping capacities from all the seven wells are about 14,450 GPM, approximately 20.8 MGD. In this current phase of the ASR Program expansion, the City plans to install 4 additional wells by 2030 to provide additional groundwater supplies. Currently, the City plans to design and construct all new wells with ASR capability to allow for greater groundwater banking and extraction capability throughout seasonal variations in surface water supply availability. Many of these planned well sites have been reassessed and relocated to areas of the City with more advantageous groundwater conditions as well as hydraulics with respect to the distribution network. Installation of wells higher in the hydraulic grade of the system will allow for a greater downstream sphere of influence for this infrastructure and more flexible system operation in times of reliance on groundwater. The City will also embark on an update to its Ground Water Strategic Plan that will lay out the road map for the potential future expansion of its ASR Program.

7.1.4 Other Constraints

Aside from legal and physical constraints, several other considerations affect the availability and reliability of Roseville's water supply portfolio. The City's purchased surface water supply is subject to reductions during dry years (seasonal and climatic shortages) pursuant to the Water Forum Agreement (WFA), the USBR Operations Criteria and Plan (OCAP), and the Central Valley Project Municipal and Industrial Water Shortage Policy (CVP M&I WSP), as well as the new ARTESIAN Project Agreement. These agreements and programs are discussed in greater detail in the following subsections.

7.1.4.1 Sacramento Water Forum Agreement

The Sacramento Water Forum is a diverse group of business and agricultural leaders, citizen groups, and environmentalists, water managers, and local governments working together to balance two co-equal objectives:

1. Provide a reliable and safe water supply for the Sacramento region's long-term growth and economic health.
2. Preserve the fishery, wildlife, recreational and aesthetic values of the Lower American River.

The City, along with several other Sacramento-area water suppliers are signatory to the January 2000 Water Forum Agreement (WFA) which includes Purveyor Specific Agreements, with the most recent revisions to these agreements in 2015. The WFA provides the framework for how water resources, including surface water and groundwater supplies, would be used in the region through the year 2030. The City's Purveyor Specific Agreement includes limitations on City surface water diversions from the American River under various hydrologic conditions. The Water Forum categorized water years into three types, all of which are defined in terms of the projected March through November unimpaired flow into Folsom Reservoir. These hydrologic year types are as follows in COR Table 7-A.

COR Table 7-A Water Forum Agreement Hydrologic Year Types

Year Type	Unimpaired Flow into Folsom Reservoir
Normal/Average or Wet Year	Greater than or equal to 950,000 AF
Drier Year	Between 400,000 and 950,000 AF
Driest/Critically Dry Year	Less than 400,000 AF

Although Roseville's water contract entitlements total 66,000 AF/yr, the City's diversions from the American River are limited by the WFA in normal/wet years, drier, and driest years. In normal/wet years, the City has historically agreed to limit surface water diversions from the American River to 58,900 AF/yr. In driest or critically dry years, the maximum diversion from the American River has been limited to 39,800 AF/yr. In drier years, the City has diverted an amount between 39,800 and 58,900 AF/yr from the American River, calculated linearly depending on the unimpaired flow into Folsom Reservoir. As outlined in previous chapters, the City's supply contract with PCWA received through Folsom Reservoir has recently increased to 34,000 AF with planned subsequent increases to39,000 and 44,000 AF in 2030 and 2035, respectively. This has the effect of a proportional increase in the above limitations on diversions from the American River. Figure 7-1 depicts this change in the applicability of the WFA limitations over time.

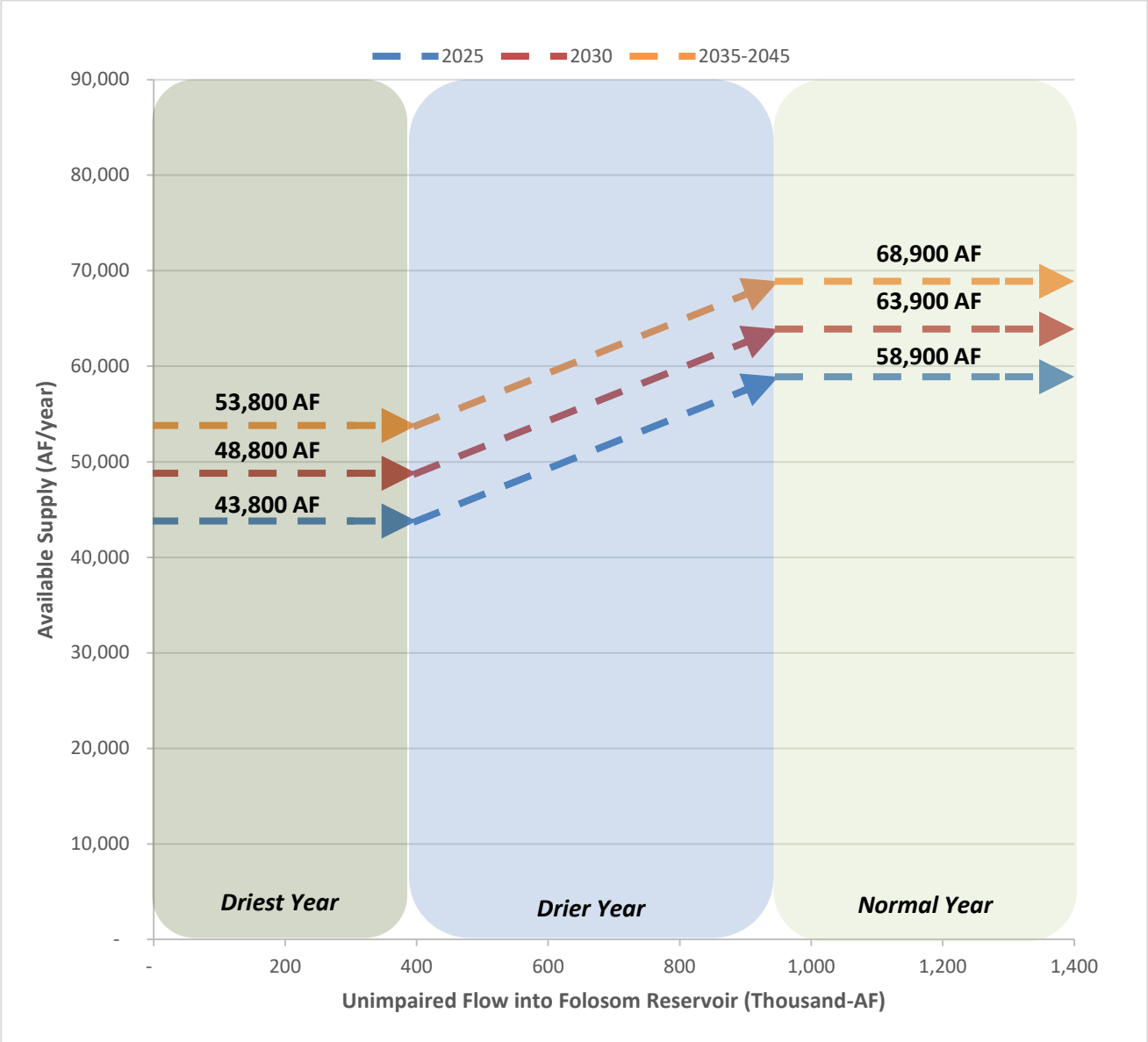


Figure 7-1 Water Forum Agreement Supply Limitations

During drier and driest years, the City also has an agreement with PCWA to release an additional 20,000 AF/yr of water down the American River on the City's behalf through re-operation of PCWA's American River Middle Fork Project (MFP). This 20,000 AF/yr of water is not part of the City's contracted supply of 66,000 AF/yr. The intent of the MFP re-operational releases during drier and driest years is to mitigate environmental impacts resulting from increased diversions above 1995 baseline levels.

7.1.4.2 USBR Operations Criteria and Plan

In addition to the WFA, the City's USBR water is also subject to restrictions as detailed in the 2004 Long Term Central Valley Project Operations and Criteria Plan (location on USBR's website). Chapter 5 of the OCAP entitled "Operations Forecasting" states that CVP allocations can be affected by:

- Forecasted reservoir inflows and Central Valley hydrologic water supply;
- Current amounts of storage in upstream reservoirs and in San Luis Reservoir;
- Projected water demands in the Sacramento Valley;
- Instream and Delta regulatory requirements;
- Annual management of 3406(b)(2) resources (related to fish and wildlife); and/or
- Efficient use of CVP-SWP export capacity through Joint Point of Diversion flexibility.

The OCAP includes a requirement that contractors be informed by USBR no later than February 15 of any possible deficiency in supplies that year. Since 1992, increasing constraints placed on operations by legislative and ESA requirements have made water delivery to CVP contractors more difficult, with recent drought conditions further impacting deliveries. Additionally, it is important to note that the City's USBR water deliveries may be curtailed purely based on downstream Delta conditions, irrespective of available upstream supply.

7.1.4.3 Central Valley Project Municipal and Industrial Water Shortage Policy

Upon a Condition of Shortage as determined by the OCAP, the CVP M&I WSP details the "incremental steps" by which available M&I water supply is allocated to the CVP water service contractors. From the November 2015 USBR news release, elements of the CVP M&I WSP include:

- Define water shortage terms and conditions for applicable CVP water service contractors, as appropriate.
- Determine the quantity of water made available to CVP water service contractors that, together with the M&I water service contractors' drought water conservation measures and other non-CVP water supplies, would assist the M&I water service contractors in their efforts to protect public health and safety during severe or continuing drought.
- Provide information to CVP water service contractors for their use in water supply planning and development of drought contingency plans.

The Final Environmental Impact Statement (EIS) describes the existing setting, alternatives for future operations under the CVP M&I WSP, and potential environmental impacts of each alternative. USBR selected Alternative 4, the Preferred Alternative, which comprises the Updated CVP M&I Water Shortage Policy developed by USBR with stakeholder input received during preparation of the Final EIS.

This decision will give USBR the greatest degree of flexibility to address CVP water service contractors' needs during a Condition of Shortage while recognizing that CVP deliveries are subject to the amount of CVP water available. The Updated CVP M&I WSP also provides clarity to the terms, conditions, and procedures of the CVP M&I WSP. A copy of the November 2015 Final Record of Decision is included in Appendix L.

7.2 Water Supply Reliability Assessment

This section addresses the reliability of the City's water supply in average, single dry, and multiple dry water years. The City uses the following water year definitions from the DWR 2025 Guidebook:

COR Table 7-B Reliability Assessment Year Type Characterization

Year Type	Description
Average or Normal Year	A single year or averaged range of years that most closely represents the average water supply available to the Supplier. The City estimates this as a year with a USBR allocation of 100%.
Single Dry Year	The year that represents the lowest water supply available to the Supplier. The City estimates this as a year with a USBR allocation of 25%.
Five Consecutive Year Drought	The driest five-year historical sequence for the supplier. [1]The City has represented this condition with a series of years in which the City receives USBR allocations of 75%, 50%, 25%, 25%, and 0%.
NOTES: [1]In this case, the City has elected to model a more severe five consecutive year drought than has historically occurred to facilitate the most robust forward planning.	

The reliability of the potable and recycled water supplies is discussed in the following sections and are compared to the projected potable and recycled water demand.

7.2.1 Potable Water Supply and Demand Assessment

This section provides an assessment of the City's expected water supply and demand for Normal Year, Single Dry Year, and Five Consecutive Year Drought scenarios, based on data available at the time of publication of this UWMP, and discusses the City plans to mitigate potential supply deficits.

The City has modeled the following year types according to historical USBR allocations which have the greatest degree of variability and impact to Roseville's supply portfolio each year. Although it is straightforward to select representative years for Normal and Single Dry, in the case of extended drought, the City has elected to analyze a more extreme sequence of USBR allocations than have actually occurred, ending with a "dead pool" scenario which has never occurred. Climate change trends make conditions such as the "dead pool" scenario more likely, which is why the City is analyzing it. This approach to the analysis is intended to be conservative and proactive given the real risk of restricted Bureau supply. The City established the following to guide this assessment:

- **Average or Normal Year:** 100% of accessible supplies are available.
- **Single Dry Year:** Lowest available supply with access to Folsom Reservoir; accessible supplies with all extreme dry year curtailments applied.
- **Five Consecutive Year Drought:** A sequence of increasingly reduced USBR allocations, culminating in a "dead pool" condition with no availability of USBR supplies or PCWA surface water supplies.

Quantification of available supplies will be thoroughly modeled in COR Table 7-D.

The City intends to use their groundwater supply only in emergency supply conditions, augmenting available supply where needed and only to the extent necessary. Under Normal Year conditions, the City does not intend to extract groundwater supplies, except for well maintenance activities, during which any volume pumped is returned to the aquifer. The City may also inject excess surface water supplies when available, resulting in a net benefit to groundwater storage. However, in a Single Dry Year or multi-year drought condition, the City will utilize their groundwater when necessary to meet demand. These assumptions and the resulting groundwater availability by year type are outlined in COR Table 7-C.

COR Table 7-C Groundwater Supply Availability by Year Type

Ground Water Supplies and Management by Year Type						
Well Data[1]	Operational Production and ASR Wells	7	11	11	11	11
	Total Annual Extraction Capacity	23,300	36,200	36,200	36,200	36,200
	Total Annual Injection Capacity	10,500	17,000	17,000	17,000	17,000
Year Type	**Assumptions**	**2025**	**2030**	**2035**	**2040**	**Buildout**
Normal	In a Normal Year, the City would typically inject and avoid extraction. The injection window is estimated to be between **3 months and 9 months** at **80% capacity** to allow for maintenance. Injection would typically be possible during the wet season when additional volume might be available.	(193)	(3,360-10,080)	(3,360-10,080)	(3,360-10,080)	(3,360-10,080)
Single Dry	In a Single Dry Year, the City would expect to pump **as needed** at **80% capacity** to allow for 20% down time for maintenance. Additional demand is included in the Single Dry Year as it is assumed to be a "call-year" for the ARTESIAN grant commitment.	0	19,629	21,664	23,511	24,979
Years 3 and 4 of a Multi-Year Drought	In the 3rd and 4th year of a 5 -Year Drought, the City would expect to pump **as needed** at **80% capacity** to allow for 20% down time for maintenance.	0	15,169	17,204	19,051	20,519
Year 5 of a Multi-Year Drought	In the 5th year of a 5 -Year Drought, the City would expect to pump at **full 80% capacity** to allow for 20% down time for maintenance.	18,700	29,000	29,000	29,000	29,000

NOTES: All values are in AF. Numbers shown in (parentheses) above are understood to be negative in value as they represent injection values not extraction.
[1]Well Data represents the total rated extraction and injection capacities of all operational wells in that year.

The number of operational production and ASR wells is projected to increase from 7 in 2025 to 11 by 2030, increasing total annual extraction capacity from 23,300 AF to 36,200 AF and total annual injection capacity from 10,500 AF to 17,000 AF. Extraction (pumping) rates are assumed at approximately 80 percent of total rated capacity to allow for maintenance. Injection rates are assumed to be 50 percent of extraction rates. Under Normal Year conditions, the City does not rely on groundwater extraction and instead prioritizes aquifer recharge, with injection occurring primarily during the wet season over a 3-to-9-month window; with net injection volumes ranging from approximately 3,360 to 10,080 AF annually. In a Single Dry Year, groundwater extraction is utilized as necessary, shown as projected supply augmentation in DWR Table 7-3. Similarly, in the third and fourth years of a multi-year drought, extraction provides additional supply shown as the projected supply augmentation in DWR Table 7-4 and DWR Table 7-5. By the fifth year of a prolonged drought, the City maximizes groundwater production, operating continuously at the assumed 80 percent capacity, producing 18,700 AF in 2025 and 29,000 AF from 2030 through buildout. Production and ASR well development is further characterized in Appendix S.

The availability of total water supply from each source by hydrologic year type is outlined in COR Table 7-D.

COR Table 7-D Potable Supply Availability by Year Type

Potable Water Supply Availability by Source and Hydrologic Year Type					
Supply Source	**2025 (current)**	**2030**	**2035**	**2040**	**2045**
NORMAL WATER YEAR[1]					
USBR	32,000	32,000	32,000	32,000	32,000
PCWA	34,000	39,000	44,000	44,000	44,000
PCWA Emergency	n/a	n/a	n/a	n/a	n/a
Water Forum Limitation	-7,100	-7,100	-7,100	-7,100	-7,100
Groundwater	0	0	0	0	0
Total Available Supply	58,900	63,900	68,900	68,900	68,900
SINGLE DRY YEAR[2]					
USBR	8,000	8,000	8,000	8,000	8,000
PCWA	25,540	25,540	25,540	25,540	25,540
PCWA Emergency	n/a	n/a	n/a	n/a	n/a
Water Forum Limitation	0	0	0	0	0
Groundwater	0	19,629	21,664	23,511	24,979
Total Available Supply	33,540	53,169	55,204	57,051	58,519
FIVE CONSECUTIVE YEAR DROUGHT - YEAR 1[3]					
USBR	24,000	24,000	24,000	24,000	24,000
PCWA	34,000	39,000	44,000	44,000	44,000
PCWA Emergency	n/a	n/a	n/a	n/a	n/a
Water Forum Limitation	0	0	0	0	0
Groundwater	0	0	0	0	0
Total Available Supply	58,000	63,000	68,000	68,000	68,000
FIVE CONSECUTIVE YEAR DROUGHT - YEAR 2[4]					
USBR	16,000	16,000	16,000	16,000	16,000
PCWA	34,000	39,000	44,000	44,000	44,000
PCWA Emergency	n/a	n/a	n/a	n/a	n/a
Water Forum Limitation	0	0	0	0	0
Groundwater	0	0	0	0	0
Total Available Supply	50,000	55,000	60,000	60,000	60,000
FIVE CONSECUTIVE YEAR DROUGHT - YEAR 3[5]					
USBR	8,000	8,000	8,000	8,000	8,000
PCWA	30,000	30,000	30,000	30,000	30,000
PCWA Emergency	n/a	n/a	n/a	n/a	n/a
Water Forum Limitation	0	0	0	0	0
Groundwater	0	15,169	17,204	19,051	20,519
Total Available Supply	38,000	53,169	55,204	57,051	58,519
FIVE CONSECUTIVE YEAR DROUGHT - YEAR 4[6]					
USBR	8,000	8,000	8,000	8,000	8,000
PCWA	30,000	30,000	30,000	30,000	30,000
PCWA Emergency	n/a	n/a	n/a	n/a	n/a
Water Forum Limitation	0	0	0	0	0
Groundwater	0	15,169	17,204	19,051	20,519
Total Available Supply	38,000	53,169	55,204	57,051	58,519
FIVE CONSECUTIVE YEAR DROUGHT - YEAR 5[7]					
USBR	0	0	0	0	0
PCWA	0	0	0	0	0
PCWA Emergency	11,200	11,200	11,200	11,200	11,200
Water Forum Limitation	0	0	0	0	0
Groundwater	18,700	29,000	29,000	29,000	29,000
Total Available Supply	29,900	40,200	40,200	40,200	40,200

NOTES: Groundwater is more significantly relied on in single dry years and years 3, 4, and 5 of a five consecutive year drought condition. Recycled water is included in this analysis with equal values on the demand and supply sides as it can be produced to meet the full amount of demand. All values are in AF.

Potable Water Supply Availability by Source and Hydrologic Year Type
[1] Normal Year defined by a 100% USBR allocation and full allotment from PCWA. [2] Single Dry Year defined by a 25% USBR allocation, 30,000 AF from PCWA, and a "call year" for the ARTESIAN Project requiring a 4,460 AF groundwater offset from surface supplies. [3] Five Year Drought – Year 1 defined by a 75% USBR allocation and full allotment from PCWA. [4] Five Year Drought – Year 2 defined by a 50% USBR allocation and full allotment from PCWA. [5] Five Year Drought – Year 3 defined by a 25% USBR allocation and 30,000AF from PCWA. [6] Five Year Drought – Year 4 defined by a 25% USBR allocation and 30,000AF from PCWA. [7] Five Year Drought – Year 5 defined by a 0% USBR allocation, and 0 AF of raw water supply from PCWA. This is otherwise known as the "dead pool condition" and represents a severe drought that renders the diversion point at Folsom Reservoir unusable. In this instance, PCWA Emergency supply of 11,200 AF of treated water via intertie would become available contingent upon both PCWA and Roseville customers attaining 20% conservation, and the City would utilize groundwater to the greatest extent possible.

7.2.2 Comparison of Supply and Demand

A comparison of projected water supply and demand during Normal, Single Dry, and Five Consecutive Year Drought conditions are included in DWR Table 7-2, DWR Table 7-3, DWR Table 7-4, and DWR Table 7-5. It is important to note that in all scenarios shown in these tables, Normal Year demands are shown without reflecting any of the passive conservation the City typically observes. No specific conservation effort to reduce demands in a drought year have been shown in these tables in order to depict the most conservative comparison of supply and demand in these year types. As shown, there is an adequate water supply in all normal years. In single dry years and in certain multiple dry years, water supply deficits may occur, and so groundwater is used to augment supply and make up the difference. In Year Five of the consecutive drought, modeling the "dead pool" condition, all available supplies are not sufficient to meet unconstrained demand, and so conservation measures will be required to balance the shortage.

7.2.3 Recycled Water Supply and Demand Comparison

The City's recycled water supply is an important resource as it is considered to be 100% reliable in all water year types. Recycled water supply has been set equal to the projected recycled water demand in these analyses because showing a surplus recycled water supply would mask potential potable water shortages. Hence, recycled water quantities are not included in supply and demand totals since the ultimate difference for those quantities is 0.

7.2.4 Total Water Supply and Demand Comparison

A comparison of projected total (potable and recycled) water supply and demand during a normal water year is included in DWR Table 7-2. As shown, there is an adequate water supply in normal years to meet demands through 2045.

DWR Table 7-2 NORMAL YEAR

Submittal Table 7-2 Retail: Normal Year Supply and Use Comparison Water Code Section 10635 (a)				
	2030 (AF)	**2035 (AF)**	**2040 (AF)**	**2045 (AF)**
Supply totals[1]	63,819	73,853	74,427	75,001
Use totals[2]	60,908	63,517	65,937	67,980
Surplus/(shortfall)	2,911	10,336	8,489	7,021

NOTES: All values are in AF. Recycled water is included on both the supply and demand sides of this calculation, in equal values that have no ultimate effect on the shortage analysis. Recycled water is produced in quantities that match current demand, as shown in DWR Table 6-4 and DWR Table 6-9.
[1]Supply Totals shown above are found in the Reasonably Available Volume column in DWR Table 6-9. Groundwater is not included here as the City will only use groundwater in drought conditions.
[2]Use Totals shown above represent "Demand" Totals and are found in DWR Table 4-2, including groundwater recharge in this year type.

A comparison of projected water supply and demand during a Single Dry Year is included in DWR Table 7-3.

DWR Table 7-3 SINGLE DRY YEAR

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)**
Supply totals[1]	37,919	38,493	39,067	39,641
Use totals[2]	57,548	60,157	62,577	64,620
Surplus/(shortfall)	(19,629)	(21,664)	(23,511)	(24,979)
Planned WSCP Actions				
WSCP - supply augmentation benefit[3]	19,629	21,664	23,511	24,979
WSCP - use reduction savings benefit	0	0	0	0
Revised Surplus/(shortfall)	0	0	0	0

NOTES: All values are in AF. Recycled water is included on both the supply and demand sides of this calculation, in equal values that have no ultimate effect on the shortage analysis. Recycled water is produced in quantities that match current demand, as shown in DWR Table 6-4 and DWR Table 6-9.
[1]Supply Totals represent the Single Dry Year Total Available Supplies from COR Table 7-D, without groundwater as groundwater is shown separately as a Supply Augmentation, plus recycled water totals from DWR Table 6-4.
[2]Use Totals shown above represent DWR Table 4-2 "Demand" Totals. It is assumed that no groundwater recharge demand would apply in drought years.
[3]Supply Augmentation equates to the use of groundwater applied in the required amount to satisfy demand.

A comparison of projected water supply and demand during a Five Consecutive Year Drought in the long term is included in DWR Table 7-4.

DWR Table 7-4 LONG TERM FIVE CONSECUTIVE YEAR DROUGHT

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)**
First year	Supply totals[1]	67,379	72,953	73,527	74,101
	Use totals[2]	57,548	60,157	62,577	64,620
	Surplus/(shortfall)	9,831	12,796	10,949	9,481
Second year	Supply totals[1]	59,379	64,953	65,527	66,101
	Use totals[2]	57,548	60,157	62,577	64,620
	Surplus/(shortfall)	1,831	4,796	2,949	1,481
Third year	Supply totals[1]	42,379	42,953	43,527	44,101
	Use totals[2]	57,548	60,157	62,577	64,620
	Surplus/(shortfall)	(15,169)	(17,204)	(19,051)	(20,519)
	Planned WSCP Actions				
	WSCP - supply augmentation benefit[4]	15,169	17,204	19,051	20,519
	WSCP - use reduction savings benefit	0	0	0	0
	Revised Surplus/(shortfall)	0	0	0	0
Fourth year	Supply totals[1]	42,379	42,953	43,527	44,101
	Use totals[2]	57,548	60,157	62,577	64,620
	Surplus/(shortfall)	(15,169)	(17,204)	(19,051)	(20,519)
	Planned WSCP Actions				
	WSCP - supply augmentation benefit[4]	15,169	17,204	19,051	20,519
	WSCP - use reduction savings benefit	0	0	0	0
	Revised Surplus/(shortfall)	0	0	0	0
Fifth year	Supply totals[1]	15,579	16,153	16,727	17,301
	Use totals[3]	57,198	59,807	62,227	64,270
	Surplus/(shortfall)	(41,619)	(43,654)	(45,501)	(46,969)
	Planned WSCP Actions				
	WSCP - supply augmentation benefit[4]	29,000	29,000	29,000	29,000
	WSCP - use reduction savings benefit[5]	12,619	14,654	16,501	17,969
	Revised Surplus/(shortfall)	0	0	0	0

NOTES: All values are in AF. Recycled water is included on both the supply and demand sides of this calculation, in equal values that have no ultimate effect on the shortage analysis. Recycled water is produced in quantities that match current demand as shown in DWR Table 6-4 and DWR Table 6-9.

[1]Supply Totals represent the Five Consecutive Year Drought Total Available Supplies from COR Table 7-D, without groundwater as groundwater is shown separately as a Supply Augmentation, plus recycled water totals from DWR Table 6-4.

[2]Use Totals shown above (First Year - Fourth Year) represent DWR Table 4-2 "Demand" Totals. It is assumed that no groundwater recharge demand would apply in drought years.

Submittal Table 7-4 Retail: Multiple Dry Years Supply and Use Comparison Water Code Section 10635(a)
[3]Use Totals shown above (Fifth Year) represent DWR Table 4-2 "Demand" Totals. It is assumed that no groundwater recharge demand or discharge to Linda Creek would apply in the "dead pool" condition represented. [4]Supply Augmentation equates to the use of groundwater applied in the required amount to satisfy demand. [5]Year 5 of the Consecutive Year Drought in the long term would require 22% use reduction in 2030, 25% in 2035, 27% in 2040, and 28% in 2045.

A comparison of projected water supply and demand during a Five Consecutive Year Drought in the short term is included in DWR Table 7-5.

DWR Table 7-5 SHORT TERM FIVE CONSECUTIVE YEAR DROUGHT

Submittal Table 7-5 Retail: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)	
2026	**Total**
Total Water Use (AF)[1]	40,186
Total Supplies (AF)[2]	61,882
Surplus/Shortfall w/o WSCP Action	21,696
2027	**Total**
Total Water Use (AF)	44,526
Total Supplies (AF)[2]	54,006
Surplus/Shortfall w/o WSCP Action	9,480
2028	**Total**
Total Water Use (AF)[1]	48,867
Total Supplies (AF)[2]	42,131
Surplus/Shortfall w/o WSCP Action	(6,736)
Planned WSCP Actions	
WSCP - supply augmentation benefit (AF)[4]	6,736
WSCP - use reduction savings benefit (AF)	0
Revised Surplus/(shortfall)	0
2029	**Total**
Total Water Use (AF)[1]	53,207
Total Supplies (AF)[2]	42,255
Surplus/Shortfall w/o WSCP Action	(10,952)
Planned WSCP Actions	
WSCP - supply augmentation benefit (AF)[4]	10,952
WSCP - use reduction savings benefit (AF)	0
Revised Surplus/(shortfall)	0
2030	**Total**
Total Water Use (AF)[3]	57,198
Total Supplies (AF)[2]	15,579

Submittal Table 7-5 Retail: Five-Year Drought Risk Assessment Water Code Section 10635(b)(3)	
Surplus/Shortfall w/o WSCP Action	(41,619)
Planned WSCP Actions	
WSCP - supply augmentation benefit (AF) [4]	29,000
WSCP - use reduction savings benefit (AF)[5]	12,619
Revised Surplus/(shortfall)	0

NOTES: All values are in AF. Recycled water is included on both the supply and demand sides of this calculation, in equal values that have no ultimate effect on the shortage analysis. Recycled water is produced in quantities that match current demand, as shown in DWR Table 6-4 and DWR Table 6-9.
[1]Total Water Use shown above (2026 - 2029) represent DWR Table 4- 1 and DWR Table 4-2 "Demand" Totals, excluding Groundwater Recharge, linearly interpolated between years 2025 and 2030 as shown in Appendix T.
[2]Total Supplies shown above represent the Five Consecutive Year Drought Total Available Supplies from COR Table 7-D, without groundwater as groundwater is shown separately as a Supply Augmentation, plus recycled water totals from DWR Table 6-4, linearly interpolated between years 2025 and 2030 as shown in Appendix T.
[3]Total Water Use shown above represents the DWR Table 4-2 "Demand" Total for 2030. It is assumed that no groundwater recharge demand or discharge to Linda Creek would apply in the "dead pool" condition represented.
[4]Supply Augmentation equates to the use of groundwater applied in the required amount to satisfy demand.
[5]Year 5 of the Consecutive Year Drought in the short term would require 22% use reduction.

As stated in DWR Table 7-2, there is sufficient supply to meet demands in Normal Years through 2045. In Single Dry Years and some extended drought years, shortages do occur. The remaining deficits shown will be mitigated by use of groundwater as supply augmentation and potable water conservation measures implemented as part of the Water Shortage Contingency Plan (WSCP).

7.2.5 Deficit Mitigation

Depending on the surface water supply available from USBR, and in accordance with the WFA, deficits in potable water supply may occur in a single dry year or the latter stages of an extended drought condition. As shown in DWR Table 7-4 and DWR Table 7-5, the greatest potential deficit between available supply and demand would occur in Year 5 of a Five Consecutive Year Drought condition.

Strategy to alleviate deficiencies shown above is indicated in the Planned WSCP Actions portion of DWR Table 7-3, DWR Table 7-4, and DWR Table 7-5. The volume of water savings resulting from potable water demand reductions are shown in these tables.

The City will determine the needed balance between water conservation and groundwater pumping on a case-by-case basis consistent with the City's Municipal Code. The City also continues to plan for and analyze opportunities for water supply projects or exchanges that would increase the reliability of the surface water supplies diverted from the American River.

7.3 Regional Supply and Reliability

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. However,

the City is actively engaged in multiple planning projects and coordination intended to strengthen water supply reliability throughout the Sacramento area, in addition to long-term water storage projects like the future Sites Reservoir. Projects like Sites will not provide direct benefit in terms of water supply to Roseville; however, as a regional project it promises to strengthen the Northern California water portfolio as a whole, providing benefit to all who operate within this sphere. The City is a committed regional partner in working to solve supply shortage issues before they become a critical reality, with climate change and increasingly limited supply sources at the crux of the issue. The City will continue these efforts into the future and work with its partner agencies to find the best path forward.

Chapter 8 Water Shortage Contingency Plan

Following the severe drought of 2012-2016, the State of California Legislature sought to expand the water shortage contingency analysis under former law and mandated that a Water Shortage Contingency Plan (WSCP) be adopted by suppliers. A copy of the WSCP is provided in Appendix M.

WSCP Table 4, WSCP Table 7, and WSCP Table 6 in the Water Shortage Contingency Plan correspond with DWR Table 8-1, DWR Table 8-2, and DWR Table 8-3 respectively and are provided below.

DWR Table 8-1

Submittal Table 8-1: Cross-reference for Standard vs Supplier Shortage Levels
Water Code Section 10632(a)(3)(B)

Standard Shortage Levels	Percent Shortage Range	Suppliers Shortage Levels	Percent Shortage Range
1	Up to 10%	Basic Stage/Stage One Drought	City's water supply is adequate to meet all projected demands/City's water supply is adequate to meet 90% of projected demands
2	Up to 20%	Stage Two Drought	City's water supply is adequate to meet 80% of projected demands
3	Up to 30%	Stage Three Drought	City's water supply is adequate to meet 70% of projected demands
4	Up to 40%	Stage Four Drought	City's water supply is adequate to meet 60% of projected demands
5	Up to 50%	Stage Five Drought	City's water supply is adequate to meet 50% or less of projected demands
6	>50%	Stage Five Drought	City's water supply is adequate to meet 50% or less of projected demands

NOTES: Water shortage stages are defined in Chapter 14.09 of the City's Municipal Code.

DWR Table 8-2

Submittal Table 8-2 Retail: Supply Augmentation and Other Actions Water Code Section 10632(a)(4)(A), (C), and (E)				
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)			
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
		Volume or Percentage	Shortage Gap Reduction Value (AF)	
3	Stored Emergency Supply	Percentage	0-10%	Groundwater Pumped
4	Stored Emergency Supply	Percentage	0-20%	Groundwater Pumped
5 & 6	Stored Emergency Supply	Percentage	0-30%	Groundwater Pumped

DWR Table 8-3

Submittal Table 8-3 Retail: Demand Reduction Actions Water Code Section 10632(a)(4)(B), (D), and (E)					
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?		Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
		Volume or Percentage	Shortage Gap Reduction Value (AF)		
1	Landscape - Restrict or prohibit runoff from landscape irrigation	Percentage	0%	14.09.030(A)	Yes
1	Landscape - Limit landscape irrigation to specific times	Percentage	0%	14.09.020(A)(1); No person shall use, or cause to be used, any city water for landscape irrigation between the hours of 10:00 a.m. and 8:00 p.m., unless the city manager, or designee provides prior written consent to a different time limitation. A waiver may be granted for turf areas if the landscape contains too many irrigation valves to complete an irrigation event within the watering window.	Yes
1	Landscape - Limit landscape irrigation to specific days	Percentage	0%	14.09.060(E)(2); Irrigation of new landscaping shall be allowed on any day of the week for a period of 30 days after the new landscaping is planted, unless the city manager, or designee, provides prior written consent to extend this time period based on plant type and the season when the new landscaping is planted. After the 30 days, irrigation days and run times should be decreased to settings appropriate for an established landscape.	Yes
1	Landscape - Prohibit certain types of landscape irrigation	Percentage	0%	14.09.030(E); Prohibit operation of an irrigation system that applies water to an impervious surface or that is in disrepair.	Yes
1	Landscape - Other landscape restriction or prohibition	Percentage	0%	14.09.030(G); Prohibit irrigation of landscaping during rainfall or 48 hours after a measurable rain event.	Yes
1	Landscape - Other landscape restriction or prohibition	Percentage	0%	14.090.060(E)(1); All landscaping installed in the City of Roseville shall comply with the water efficient landscape requirements adopted by resolution of the city council.	Yes

Submittal Table 8-3 Retail: Demand Reduction Actions Water Code Section 10632(a)(4)(B), (D), and (E)					
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?		Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
		Volume or Percentage	Shortage Gap Reduction Value (AF)		
1	Other water feature or swimming pool restriction	Percentage	0%	14.09.030(C); Prohibit maintaining ponds, waterways, decorative basins, or swimming pools without water recirculation devices.	Yes
1	Other water feature or swimming pool restriction	Percentage	0%	14.09.030(D); Prohibit backwashing so as to discharge to waste swimming pools, decorative basins or ponds in excess of the frequency necessary to ensure the healthful condition of the water or in excess of that required by standards for professionally administered maintenance or to address structural considerations, as determined by the city manager, or designee.	Yes
1	Other water feature or swimming pool restriction	Percentage	0%	14.09.030(H); Prohibit overfilling of any pond, pool or fountain which results in water discharging to waste.	Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner	Percentage	0%	14.09.060(C)	Yes
1	Other - Require automatic shut of hoses	Percentage	0%	14.09.060(B); Free-flowing hoses for all uses are prohibited. Automatic shut-off devices shall be attached on any hose or filling apparatus in use.	Yes
1	Other	Percentage	0%	14.09.030(B); Prohibit water fixtures (including, but not limited to, toilets, faucets, shower heads) or heating or cooling devices to leak or run to waste.	Yes
1	Other	Percentage	0%	14.09.030(A); Prohibit water use for washing in excess of that necessary to wash, wet or clean the dirty or dusty object, such as an automobile, sidewalk, or parking area, flows to waste.	Yes

Submittal Table 8-3 Retail: Demand Reduction Actions Water Code Section 10632(a)(4)(B), (D), and (E)					
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?		Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
		Volume or Percentage	Shortage Gap Reduction Value (AF)		
1	Other	Percentage	0%	14.09.060(A); Water shall be confined to the user's property and shall not be allowed to run off to adjoining properties, or to the roadside or to the gutter. Care shall be taken not to water past the point of saturation.	Yes
1	Other	Percentage	0%	14.09.060(F); All site reviews shall include an evaluation of using recycled water. Recycled water shall be required if economically feasible.	Yes
1	Landscape - Limit landscape irrigation to specific days	Percentage	1%	14.09.070(C) and 14.09.070(D); Residential and non-residential water users shall be permitted to irrigate with city water according to the schedule provided in 14.09.070(C) and 14.09.070(D), respectively.	Yes
1	Landscape - Other landscape restriction or prohibition	Percentage	1%	14.09.070(G); City park sites shall, as an aggregate, reduce usage up to 10 percent.	Yes
1	CII - Restaurants may only serve water upon request	Percentage	1%	14.09.070(I)	Yes
1	Other - Prohibit use of potable water for washing hard surfaces	Percentage	1%	14.09.070(H); Washing streets, parking lots, driveways, sidewalks or buildings, except as necessary for health or sanitary purposes or pursuant to a term or condition in a permit issued by a state or federal agency, is prohibited.	Yes
1	Other	Percentage	10%	14.09.070(B); Residential users and non-residential users shall reduce water usage up to 10 percent.	Yes
2	Landscape - Other landscape restriction or prohibition	Percentage	1%	14.09.070(C); City park sites shall, as an aggregate, reduce usage up to 20 percent.	Yes

Submittal Table 8-3 Retail: Demand Reduction Actions Water Code Section 10632(a)(4)(B), (D), and (E)					
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?		Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
		Volume or Percentage	Shortage Gap Reduction Value (AF)		
2	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Percentage	1%	14.09.080(H)	Yes
2	Other	Percentage	10-18%	14.09.080(B); Residential users and non-residential landscapes shall reduce water usage up to 20 percent.	Yes
3	Landscape - Limit landscape irrigation to specific days	Percentage	1%	14.09.090(D) and 14.09.090(E); Residential and non-residential water users shall be permitted to irrigate with city water according to the schedule provided in 14.09.090(D) and 14.09.090(E), respectively.	Yes
3	Landscape - Other landscape restriction or prohibition	Percentage	1%	14.09.090(C); City park sites shall, as an aggregate, reduce usage up to 30 percent.	Yes
3	Landscape - Other landscape restriction or prohibition	Percentage	1%	14.09.090(H); New or expanded landscaping is limited to drought-tolerant trees, shrubs, and groundcover and be irrigated using a low volume irrigation system. No new turf shall be planted, hydroseeded, or laid, unless prior written consent is received from the city manager. Low volume irrigation means the application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters such as drip or drip lines irrigating at less than two gallons per hour. These systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.	Yes

Submittal Table 8-3 Retail: Demand Reduction Actions Water Code Section 10632(a)(4)(B), (D), and (E)					
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?		Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
		Volume or Percentage	Shortage Gap Reduction Value (AF)		
3	Water Features - Restrict water use for decorative water features, such as fountains	Percentage	1%	14.09.090(I)	Yes
3	Pools - Allow filling of swimming pools only when an appropriate cover is in place.	Percentage	1%	14.09.090(L)	Yes
3	Other - Prohibit use of potable water for construction and dust control	Percentage	1%	14.09.090(K)	Yes
3	Other	Percentage	1%	14.09.090(I); Except where recycled water is used, golf courses shall reduce irrigation up to 30 percent.	Yes
3	Other	Percentage	18-27%	14.09.090(B). Residential users and non-residential landscapes are to reduce water usage up to 30 percent.	Yes
4	Landscape - Limit landscape irrigation to specific days	Percentage	2%	14.09.100(D) and 14.09.100(E); Residential and non-residential water users shall be permitted to irrigate with city water according to the schedule provided in 14.09.100(D) and 14.09.100(E), respectively.	Yes
4	Landscape - Other landscape restriction or prohibition	Percentage	1%	14.09.100(C); City park sites shall, as an aggregate, reduce usage up to 40 percent.	Yes

Submittal Table 8-3 Retail: Demand Reduction Actions Water Code Section 10632(a)(4)(B), (D), and (E)					
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?		Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
		Volume or Percentage	Shortage Gap Reduction Value (AF)		
4	Landscape - Other landscape restriction or prohibition	Percentage	1%	14.09.100(H); Installation of any new landscaping is prohibited unless irrigation is provided through connection to an active recycled water system. In the case of new construction, the city's building official will issue a temporary final upon completion of the structural development of the property. When the city has returned to a stage two drought restriction, landscaping installation can be completed, and a building final will become available upon inspection by the city.	Yes
4	Other water feature or swimming pool restriction	Percentage	1%	14.09.100(K); Existing pools shall not be emptied and refilled using city water unless required for health or safety reasons until the city has returned to a stage two drought restriction. Pools may be re-filled only to the extent necessary to replace evaporative losses.	Yes
4	Other - Prohibit vehicle washing except at facilities using recycled or recirculating water	Percentage	1%	14.09.100(J); Automobiles or equipment shall be washed only at commercial establishments that recycle their water or by equipment and means that separates debris and recycles wash water for continual use.	Yes
4	Other	Percentage	1%	14.09.100(I); Except where recycled water is used, golf courses shall reduce irrigation up to 40 percent.	Yes
4	Other	Percentage	0%	14.09.100(L); No commitments shall be made to provide water service as part of any new land use entitlement (general plan, specific plan or amendments requesting new water allocations) until the city has returned to a stage two drought restriction. Currently approved specific plans with accompanying development agreements and projects or properties that have received water allocations in advance of full entitlements may be issued building permits so long as they comply with the remainder of this chapter.	Yes
4	Other	Percentage	27-35%	14.09.100(B); Residential users and non-residential landscapes are to reduce water usage up to 40 percent.	Yes

Submittal Table 8-3 Retail: Demand Reduction Actions Water Code Section 10632(a)(4)(B), (D), and (E)					
Yes	Is the Supplier completing this table using the standard six levels? (yes/no)				
Shortage Level	Demand Reduction Actions	How much is this going to reduce the shortage gap?		Additional Explanation or Reference	Penalty, Charge, or Other Enforcement?
		Volume or Percentage	Shortage Gap Reduction Value (AF)		
5 & 6	Landscape - Other landscape restriction or prohibition	Percentage	5%	14.09.110(C); Except where recycled water is used, water users shall reduce landscape irrigation as follows: 1. Turf shall not be irrigated. 2. Trees and shrubs may be irrigated with a properly functioning low volume landscape irrigation system or by use of a handheld hose equipped with a nozzle capable of completely shutting off the flow of water except when positive action or pressure to maintain the flow of water is applied. Low volume irrigation means the application of irrigation water at low pressure through a system of tubing or lateral lines and low-volume emitters such as drip or drip lines irrigating at less than two gallons per hour. These systems are specifically designed to apply small volumes of water slowly at or near the root zone of plants.	Yes
5 & 6	Other water feature or swimming pool restriction	Percentage	1%	14.09.110(D); Filling new or existing swimming pools and spas with city water is prohibited.	Yes
5 & 6	Other	Percentage	33%	14.09.110(B); Residential users are to reduce water usage up to 50 percent.	Yes
NOTES: References in the 'Additional Explanation or Reference' column are from sections of the City's Water Conservation and Drought Mitigation Ordinance corresponding to demand reduction action. Explanations are provided as needed. For each successive drought level all preceding restrictions shall continue in place, except to the extent they are replaced by more restrictive conditions.					

Chapter 9 Demand Management Measures

This chapter describes the City's historical and existing water conservation program, status of implementation of Demand Management Measures (DMMs), and projected future conservation implementation. The CWC requires that the UWMP include a comprehensive description of historical, current, and projected water conservation programs.

> *CWC 10631 (e) Provide a description of the supplier's water demand management measures. This description shall include all of the following:*
>
> *(1) (A) For an urban retail water supplier, as defined in Section 10608.12, a narrative description that addresses the nature and extent of each water demand management measure implemented over the past five years. The narrative shall describe the water demand management measures that the supplier plans to implement to achieve its water use targets pursuant to Section 10608.20.*
>
> *(B) The narrative pursuant to this paragraph shall include descriptions of the following water demand management measures:*
>
> *(i) Water waste prevention ordinances.*
>
> *(ii) Metering.*
>
> *(iii) Conservation pricing.*
>
> *(iv) Public education and outreach.*
>
> *(v) Programs to assess and manage distribution system real loss.*
>
> *(vi) Water conservation program coordination and staffing support.*
>
> *(vii) Other demand management measures that have a significant impact on water use as measured in gallons per capita per day, including innovative measures, if implemented.*

In previous UWMPs, a substantial amount of data was required to document a water supplier's progress in implementing fourteen specific DMMs. In 2014, Assembly Bill 2067 simplified, clarified, and updated reporting requirements for DMMs. Starting with the 2015 UWMP, focus had turned away from detailed descriptions of each of the fourteen DMMs and turned to water conservation measures that were being implemented to achieve compliance with SB X7-7. Since the City met the SBX7-7 water use target in 2020 as discussed in Chapter 5, the focus is back on detailed descriptions of the now six (plus an "other" category) DMMs. A narrative description of the status of the DMMs is required while detailed data is not. Members of the CUWCC may include their reporting in the UWMP, but a narrative is also required.

9.1 Making Conservation a California Way of Life

The "Making Conservation a California Way of Life" regulatory framework establishes long-term urban water use efficiency standards for retail water suppliers, including the City of Roseville. The framework implements Senate Bill 606 (2018) and Assembly Bill 1668 (2018) and is intended to improve water supply reliability and drought resilience under conditions of increasing hydrologic variability.

The implementing regulations, adopted in 2022 and codified in California Code of Regulations, Title 23, Section 965 et seq., require urban retail water suppliers to calculate and annually report an Urban Water Use Objective

(UWUO). The UWUO represents a supplier-specific water use efficiency target based on state-defined standards and local service area characteristics.

The UWUO is calculated as the sum of efficient water use standards for four end-use sectors: indoor residential use, outdoor residential use, commercial, industrial, and institutional (CII) landscapes with dedicated irrigation meters, and distribution system water loss.

Beginning in 2023, the City of Roseville began annual calculation and reporting of its UWUO in accordance with State requirements. Compliance is evaluated by comparing actual potable water use to the calculated UWUO on an annual basis. Urban retail water suppliers are required to meet their UWUO targets by 2027, with enforcement provisions phased in thereafter.

The UWUO framework operates in coordination with other State planning requirements, including the Urban Water Management Plan (UWMP), Water Shortage Contingency Plan (WSCP), and Annual Water Supply and Demand Assessment (AWSDA). UWMP updates also incorporate implementation of water loss standards established by the California State Water Resources Control Board.

The City implements a range of demand management measures to support progress toward UWUO compliance, including water use efficiency programs, public education and outreach, and rebate programs promoting installation of water-efficient indoor and outdoor technologies. The City also continues to invest in system maintenance, leak detection, and water loss control.

The City will continue to monitor annual performance relative to its UWUO and adjust demand management strategies as needed to ensure compliance with State requirements and support long-term water supply reliability.

9.2 Demand Management Measures

The six DMMs required to be discussed in the 2025 UWMP include the following:

- Water waste prevention ordinances;
- Metering;
- Conservation pricing;
- Public Education and outreach;
- Programs to assess and manage distribution system real loss; and
  Water conservation program coordination and staffing support.

For each DMM, the current program is described, followed by a description of how the DMM was implemented over the previous five years.

9.2.1 Water Waste Prevention Ordinances

The City currently restricts water waste within its service area. Roseville Municipal Code Chapter 14.09, Water Conservation Ordinance (Appendix N), defines water waste and associated penalties of continued infractions. Per the ordinance, customers in violation are provided a series of notifications at one-week intervals: first a courtesy notice, second an administrative warning, and finally a formal citation. If the situation is not remedied by the time

specified in the formal citation, additional measures can be taken to enforce compliance. These measures include fines, water restrictions, low flow devices, or discontinued service. In addition, the City may waive the courtesy notice and administrative warning in times of drought.

To enforce the Water Waste Ordinance, the City dedicates seven full-time field technicians to patrol for water waste as part of their normal job duties. The City has also implemented new AMI (see Section 9.1.2) to support the field technicians in identifying leaks or misuse of water during normal work and non-work hours. In addition to patrols by City staff and the AMI, the City has an online reporting mechanism that allows customers to report observed water waste anonymously. Customers can visit www.roseville.ca.gov/waterwaste and submit an electronic form, which is then further investigated by City staff.

Implementation of this DMM is ongoing and expected to help minimize nonessential uses of water so that the water is available for human consumption, sanitation, and fire protection.

9.2.2 Metering

A meter retrofit program was developed and implemented from 2001 to 2011 as a foundational step toward improving water use accountability and long-term resource management. Implementation of metered rates began immediately on all residential metered connections established after January 1, 2002, with the remaining retrofitted homes transitioned in large blocks as retrofits were completed. To support a smooth transition and promote customer understanding, residents were provided with detailed water use information for a full year prior to the initiation of volumetric billing, allowing them to adjust consumption habits and better anticipate billing changes.

Building on these earlier efforts, the City completed a multi-year water meter upgrade project in 2023, marking a major advancement in water system modernization. This initiative involved replacing aging meters with industry-standard smart meters and deploying a comprehensive Advanced Metering Infrastructure (AMI) system. The AMI system uses a secure, encrypted, two-way wireless communication network that enables automatic meter reading and real-time transmission of usage data and system alerts. Full deployment began in July 2023 and was completed ahead of schedule, reflecting the City's commitment to efficiency and innovation.

This upgraded infrastructure significantly enhances the City's ability to manage its water system. By eliminating the need for manual meters to be manually read, it reduces operational costs, improves worker safety, and allows staff to focus on higher-value system management activities. The system also provides near real-time data on water consumption, enabling faster identification of leaks, unusual usage patterns, and potential service issues. In turn, this supports more proactive maintenance, quicker response times, and reduced water loss across the system.

From a customer perspective, the AMI system represents a substantial improvement in transparency and service. Customers benefit from more accurate and timely billing, as well as access to detailed consumption data that can help them better understand and manage their water use. The availability of high-resolution usage information supports informed decision-making and encourages conservation, particularly during periods of drought or water supply constraints.

The metering DMM, with the support of AMI, further strengthens these capabilities by providing precise and actionable water use data to both the customer and the City. Higher-than-normal comparative usage automatically triggers outreach to customers who may be experiencing leaks or inefficiencies, promoting early intervention and minimizing potential damage or waste. Additionally, the system enhances public awareness of efficient water use practices through data-driven insights and targeted communication.

Overall, the City's investment in metering and AMI technology represents a comprehensive approach to water management – improving operational efficiency, enhancing customer engagement, supporting conservation goals, and ensuring the long-term sustainability of the community's water resources.

9.2.3 Conservation Pricing

As a component of its meter retrofit program, the City adopted conservation pricing for water on all metered accounts from 2011 through 2015. Later, and to comply with Proposition 218 requirements, the City transitioned to a per-use, uniform billing rate structure in February 2016. Now, with the implementation of the AMI (see Section 9.1.2), the City and customers are able to see smarter water use billing information. A complete list of service charges, excess water use charges, and water rates are included in Roseville Municipal Code Sections 14.08.090 Service Charges for Metered Service through 14.08.100 Flat Water Rates. This information is included in Appendix O.

Implementation of this DMM ensures water customers pay the true cost of water. The City regularly analyzes this cost of water production, capital improvement project needs, level of service requirements and other costs of operating the water system during regular rate studies. Where adjustments need be made, extensive public education efforts are undertaken to maintain transparency of utility operations and funding to support any required rate changes. Sufficient revenue will continue to be available to fund water system operations, maintenance, and water conservation programs.

9.2.4 Public Education and Outreach

As part of outreach and engagement efforts, the City of Roseville has a dedicated team focused on informing, educating, and engaging customers to promote water-efficient behaviors and real action. This includes working with regional partners and teaming up with the Utility Exploration Center (UEC) to offer hands-on workshops and classes throughout the year. The City hosts practical sessions that show residents how to save water at home, while the UEC provides interactive learning opportunities for families and students.

The City shares information in ways that are easy to see and access. This includes paid and earned media, story placements, the City website, e-newsletters, and other City communication channels, along with social and digital media. Informational tips and updates can be seen in bill inserts, movie theater ads, brochures, vehicle decals, community events, and special events held throughout the year.

9.2.4.1 Utility Exploration Center

In 2008, the City's utilities jointly funded and created the Roseville Utility Exploration Center (UEC). In addition to serving as a "storefront" for the utilities, the Center is used by the City for community outreach and environmental education. Designed for an interactive experience, the UEC hosts multiple hands-on exhibits with a "learning lab"

for demonstrations, presentations, and workshops. Topics include water conservation and watershed protection, energy efficiency, waste reduction, and wastewater management.

Since opening, the Utility Exploration Center has hosted over 850,000 total program participants. This includes approximately 7,000+ students (preschool through twelfth grade) served annually with programing, targeted to their specific grade level standards, exploring utilities in their daily life; partnerships with cultural, recreational, and utility-related organizations to create a lively series of changing events, workshops, and activities; and connecting with residents in a variety of off-site outreach activities.

The Center is housed within the Gold LEED (Leadership in Energy and Environmental Design) certified Martha Riley Library building, which was the first building in Placer County to be so honored. Recent developments include the "Inspiration Garden," an outdoor learning space created in partnership with Roseville's Water Efficiency division with a goal of encouraging more residents to adopt water-wise gardening practices, which was completed in 2022. Furthermore, the visitor center exhibits recently underwent a full overhaul, finished in April of 2024, to update educational messages for the utilities as the City looks forward to the next ten years. A larger outdoor project, originally called the IDEAscape, would further expand exhibits to include topics such as river-friendly landscaping and irrigation, utility systems, solar energy, and watershed protection. The project is currently on hold but is anticipated for completion by 2035.

9.2.4.2 Student Outreach

In addition to Regional Water Authority (RWA) student outreach programs, the City independently provides presentations, conservation materials, and facility tours to local schools.

9.2.5 Regional Water Authority – Outreach and Education

In addition to local public education and outreach programs, the City also participates in a regional public education and outreach program through the Regional Water Authority. The Regional Water Authority (RWA) was formed in 2001 as a joint powers authority to serve and represent the interests of over 22 water suppliers and associated agencies in the greater Sacramento, Placer, El Dorado, Sutter, Nevada and Yolo County Region. RWA's mission is to serve, represent and align the interests of regional water suppliers and stakeholders for the purposes of improving water supply reliability, availability, quality, and affordability. In collaboration with 17 water supplier members and other wastewater, stormwater and energy partners, RWA formed the Water Efficiency Program (WEP) in 2001 to bring cost effectiveness through economies of scale to public education and outreach activities.

The WEP operates on an average annual budget of $610,000 funded by participating local water suppliers and is supplemented by grant funding. Grants are an important funding resource for the Program. Since 2003, the Program has been awarded $19.9 million in grant funding for public outreach and education as well as a variety of rebate programs, fixture direct installation programs, system water loss, individualized customer usage reports, large landscape budgets and more. Of those funds, $6.7 million was awarded between 2021 and 2025.

The main function of the WEP is to develop and distribute public outreach messages to customers in the region by collaborating with its water supplier members. The Program distributes these messages on a regional scale through regional media and advertising buys and was honored with the United States Environmental Protection Agency WaterSense Partner of the Year award in 2021 along with three Public Relations Society of America (PRSA),

California Capital Chapter awards in 2023/2024 for WEP's public outreach and school education programs. From 2021-2025, the WEP created a series of public outreach campaigns. Below is a summary of each campaign and highlighted achievements.

2021 was a year for nimble messaging and maximum flexibility to adapt outreach to the rapidly changing conditions. RWA's RWEP began 2021 with a focus on household leaks and then transitioned to the fourth year of an award-winning outreach campaign focused on tackling the landscape overwatering problem by encouraging residents to check soil moisture before turning on sprinklers (Check & Save). With the sudden emergence of drought in May 2021, the program introduced new creative and tools for RWEP participants. The goal: Help provide consistent and actionable tips region-wide while providing flexibility for RWA members to customize materials to reflect their unique water supply situation and call to action.

As the drought grew more serious through late 2021 and into 2022, the WEP updated messaging again and ramped up outreach, asking residents to reduce lawn watering while continuing to water trees (Stress Your Lawn, Save Your Trees), understanding that lawns can handle less water but that drought-stressed trees can be lost forever. This messaging supported the Governor's request of water suppliers to voluntarily reduce water use by 15 percent. Additionally, the WEP continued to partner with the Sacramento Tree Foundation to help educate residents and business on how to maintain and expand the region's healthy tree canopy and included a series of co-branded educational videos and materials.

After the drought subsided in 2023, the WEP launched a new multi-year outreach program aimed at encouraging water efficiency during a non-drought year. Research indicates that public engagement in water conservation tends to surge during drought periods, such as 2022, but declines during non-drought years, like 2023. Consequently, garnering attention and motivating action becomes more challenging during non-drought periods. To tackle this challenge, the 2023 outreach program focused on two main messages:

- SUMMER STRONG—focused on promoting water-wise best practices outdoors. A Summer Strong yard is tough enough to muscle through the Sacramento region's hottest days and still look its best. The campaign featured eye-catching graphics to promote efficient tree watering, adding low-water and native plants, checking soil moisture, using weather-based sprinkler timers, and watering early to minimize evaporation.

- SUDS WOULD BE DUDS WITHOUT H2O—With clean, reliable water essential to great beer (and to the success of local breweries), the WEP launched a pilot project to partner with local craft brewers, aiming to educate patrons about the importance of water to beer and how to preserve this natural resource. Initial partners included Jack Rabbit Brewing Company and Red Bus Brewing Company, which committed to distributing Be Water Smart materials to their customers. This campaign featured the development of a rebate program to upgrade brewing equipment to be more water efficient and the distribution of coasters, koozies and stickers with water savings messages.

In 2024, the WEP enhanced its existing Summer Strong campaign with the Summer Strong Yard Champs promotion, spotlighting Sacramento-area residents who transformed their landscapes into water-efficient yards. Homeowners nominated yards featuring low-water plants and efficient irrigation systems for a chance to be

featured on regional billboards. Nearly 50 nominations were reviewed, with winners receiving professional photoshoots. Featured yards included a mix of DIY and professionally designed landscapes, all showcasing water-saving practices like low-water and native plants, drip irrigation, and rainwater capture, inspiring others to adopt similar approaches. In 2025, the Summer Strong campaign added a new mascot, Jack LaPlant, an animated plant figure that carried on all the same water savings tips but with refreshed visuals to draw in a new audience. In 2024, the WEP expanded its successful pilot project, Suds Would be Duds without H2O, with local craft breweries to raise awareness about water's role in craft beer production and to promote water efficiency. The campaign visited 52 breweries across the Sacramento region. Around 20 breweries are considered active partners, including six of the top craft breweries in the area. Promotional materials, including 10,500 coasters and 7,200 stickers, were distributed by these partners and included water-saving tips and a link to our BeWaterSmart.Info website to access rebates. Additionally, two breweries, Urban Roots Brewery & Smokehouse and Solid Ground Brewing participated in WEP's commercial indoor rebate program. Each brewery received $15,000 to upgrade or add equipment that reduced water used for chilling and sanitizing processes.

Both campaigns, Summer Strong and Suds Would be Duds without H2O, were continued through the end of 2025 and were implemented through both paid advertising buys and earned media from public service announcements (PSAs) and aired in English and Spanish. Every year the campaigns' messaging can be heard on local radio stations such as Capital Public Radio and online through Google, Facebook and YouTube advertisements. For clarification below, impressions represent how many times an ad was seen.

From 2021-2025, the WEP public outreach campaigns produced:

Television Advertising 3,926 television advertisements 23,212,700 impressions	**Radio Advertising** 5,273 radio advertisements 19,994,200 impressions
Digital Advertising (Facebook, Google Display Network & Spotify) 29,472,602 million impressions 297,870 clicks	**Billboard advertising** 2,037,102 digital advertisements 62,807,653 impressions
Streaming Video Advertising (Comcast, EyeQ, Hearst, Paramount Plus, & Premion) 3,532,621 impressions 3,532,621 advertisements	**Facebook** 60 posts per year
Public Service Announcements (Television and Radio) 24,248,000 impressions $683,400 in value had they been purchased as advertising	

The Program continues to utilize our public outreach website, http://bewatersmart.info/, and the "Be Water Smart" brand to reach customers throughout the region. The website, which completed a major redesign and upgrade in 2025, contains customer-specific (enter your address) local water supplier information on rebates and services, general top ways to save for residents and businesses, an interactive watering guidelines and water waste reporting tool, a water-wise plant and gardening database, recent press releases, the Sacramento Smart Irrigation Scheduler tool, and more. Between 2021 and 2025, the website averaged 37,000 unique visitors per year.

For more targeted outreach, the Program distributed quarterly e-newsletters to enrolled residents. The e-newsletters are filled with water savings tips, upcoming events and region-specific articles. They are usually timed around changes in the weather to help signal the need for residents to adjust their irrigation systems, such as daylight savings coupled with a message to dial back/reduce sprinkler systems run times. The e-newsletter reaches 9,361 households.

The WEP selects 2 public events each year to attend as an opportunity for the public to interact with local water efficiency staff. This provides an opportunity for the region to communicate its messages in person. From 2023-2024, WEP attended ECOS Earth Day (April) and the Farm-to-Fork Festival (September).[3] In 2025, the WEP opted to attend the Sacramento Republic Brew Festival (June) instead of the Farm-to-Fork Festival to elevate our existing partnership with Sacramento Republic FC. At these events, the Be Water Smart team provided water-wise tips, encouraged visitors to sign the pledge banner, collected e-mails for those who wish to sign up for the e-newsletter list, as well as identified a customer's water supplier and connected them with rebates and services. Additionally, WEP, in coordination with participating local water suppliers, hosts an annual Mulch Mayhem event (May) in which customers can pick up a truck load of free mulch from selected locations throughout the region.[4] Combined, these in person events are attended by thousands of people each year throughout the region.

The Program provides a variety of "give-a-way" items to customers at in person public events and through direct mail requests from the http://bewatersmart.info/ website. From 2021-2025, WEP has distributed thousands of leak detection tablets, moisture meters, garden gloves and drink koozies to customers to encourage the water savings practices described in our public outreach campaigns and brewery partnerships.

The Program is also very active in communicating to local media outlets. Between 2021 and 2025, RWA issued 23 press releases on WEP activities and regionally significant news and participated in 17 radio public affairs interviews airing on 18 stations across the Sacramento region's major commercial radio networks. The RWA and the WEP were mentioned in dozens of news articles published by local and regional media outlets both within and outside of the Sacramento region during the same time frame.

Finally, the WEP partners with professional sports teams in the region to expand the Be Water Smart advertising to new and captive audiences. WEP partnered with the Sacramento River Cats (local Triple – A affiliate of the San Francisco Giants) in 2021, which included our long standing water savings advertisements on all bathroom stall doors as well as 30-second Check & Save spots broadcast on KMAX Channel 31 during each Saturday game and multiple 30-second radio spots broadcast during every game via their streaming radio coverage. The total attendance for regular season games was 342,861. In addition, 24 special events at Sutter Health Park drew 66,300 people in 2021. In 2023, RWEP launched a new partnership with Sacramento Republic FC (local USL professional soccer team), displaying water-wise messages at games to promote "Summer Strong" yards. The partnership continued through 2025 and included the following activities: a 30-second LED ad, messaging on water refill stations, and giveaways booths at events/games.

To support public outreach messaging and promote water savings tips, the Program also coordinated several regional rebate programs, which were partially or fully funded by state, federal and private foundation grants. A

[3] No public events were attended in 2021 and 2022 due to the COVID pandemic.
[4] The 2021 Mulch Mayhem event was held in September due to the COVID pandemic.

variety of high efficiency rebate options were provided including toilets, clothes washers and irrigation efficiencies (full summary in COR Table 9-A). Additionally, from August 2023 - November 2025, RWA managed a regional direct installation program, in which a contractor was hired to replace old high use fixtures in multifamily and commercial/institutional properties in disadvantaged communities in the region. Collectively these rebates and direct installations will produce an estimated lifetime (10 years) savings of 7.4 billion gallons of water and 7.9 million kilowatt hours of energy.

COR Table 9-A Regional Rebates and Installations from 2021 through 2025.

Rebate/Installation Type	2021	2022	2023	2024	2025	Lifetime Water Savings 2021-2025 (MG)	Lifetime Energy Savings 2021-2025 (kWh)**
High Efficiency Clothes Washer Rebates	359	265	307	321	298	74.7	79,309
High Efficiency Toilet Rebates	767	1,275	602	423	326	137.5	145,990
Smart Irrigation Controller Rebates	686	1,049	3,051	556	464	1,190.2	1,264,024
Irrigation Efficiences Rebates*	5,941	7,153	13,327	11,160	10,321	5,269.2	5,595,912
Turf Replacement Rebates (square feet)	153,880	239,645	135,607	300,152	266,840	405.6	430,711
Toilet Direct Installation	NA	NA	584	2,183	1,688	141.9	150,671
Showerhead Direct Installation	NA	NA	562	1,766	1,532	197.2	209,475
Faucet Aerators Direct Installation	NA	NA	884	3,215	2,343	20.6	21,850
Urinal Direct Installation	NA	NA	-	19	40	1.3	1,348
Total Water Savings (MG)						**7,438.1**	
Total Energy Savings (kWh)**							**7,899,291**
*Includes: pressure regulator equipment, pipe and pipe fittings, drip or low volume equipment, and sprinkler heads or nozzles.							
**Regional average of 1,062 kilowatt-hours per MG							
kWh = kilowatt-hour							
MG = million gallons							
NA = no funding available							
Lifetime = 10 years							

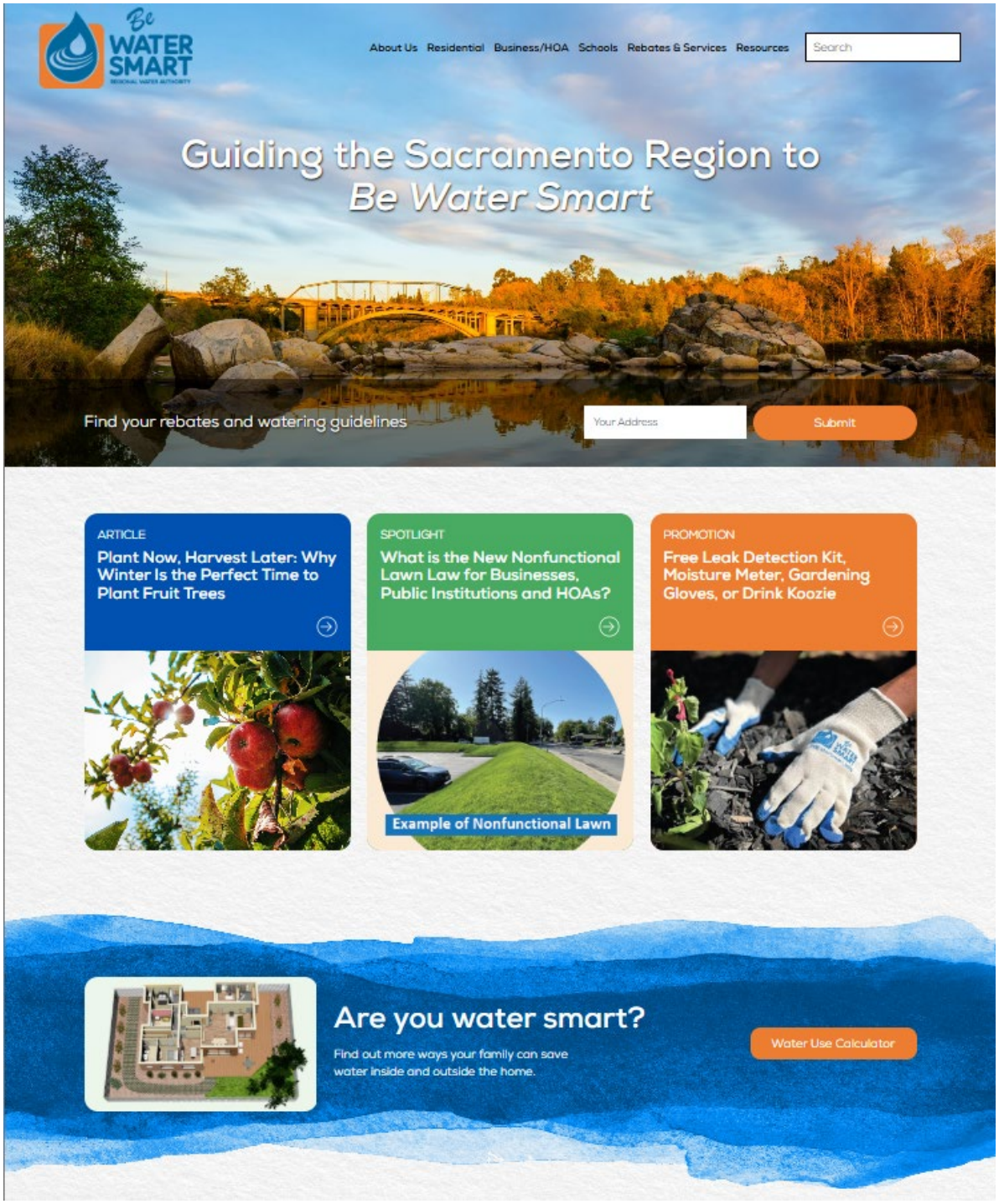
In addition to public outreach, the Program also coordinates regional school education activities. The RWA-sponsored water efficiency exhibits ($500,000 sponsorship) opened for viewing in 2021 at the new SMUD Museum of Science and Curiosity (MOSAC) in downtown Sacramento, reflecting years of input by RWA Water Efficiency Program Manager, Amy Talbot, who helped shape the exhibits. The exhibits teach visitors to become a "Home Water Detective," create their own mix tape from water conserving sounds in "Drop a Beat" and learn about local "Water Champions. MOSAC currently welcomes around 150,000 visitors a year from all over the region.

Since 2012[5], the Program has hosted the Water Spots Video Contest for high school and middle school students. The WEP provides a new contest theme each year and provides the region's teacher and students with relevant facts and images to help them develop 30 second video PSAs. The contest themes for 2022 and 2023 were "When in Drought…take action to reduce water use" and Do Your Part to Be Water Smart" respectively. Students submit their videos to WEP who hosts a panel of local celebrities including Monica Woods from ABC 10 to decide on a first, second and third place winner. The top 10 scoring videos are then posted online for public voting to select a "people's choice" winner as well. Both teachers and student receive cash prizes, and the winning videos are

[5] The program did not host a Water Spots Video Contest in 2021 due to the COVID pandemic.

played at Raley Field during River Cats games and in select movie theaters throughout the region (Example: Century Blue Oaks theatre in Rocklin and Century Laguna 16 in Elk Grove). The winning PSAs are incorporated into the WEP's media activities as well. The 2022 Grand Prize winner video "Doing Your Part" appeared 2,619 times in theatres and delivered 49,000 impressions. The 2023 Grand Prize winner video "Saving Water" appeared 2,149 times in theatres and delivered 47,000 impressions. Students from about a dozen area schools submitted a total of 54 videos total for the 2022 and 2023 contests.

In late 2023, WEP sunset the Water Spots Video Contest and launched a new school education program, Drip Drop, Hip Hop, in collaboration with NorCal School of the Arts (NorCal Arts), which brings together the worlds of art and sustainability to empower children, families, and communities in the Sacramento region. Funded by a $300,000 grant from the Capital Region Creative Corps and California Arts Council, Drip Drop, Hip Hop educates students and families about water efficiency through a two-person play and arts-integrated lesson plan. The program is free of charge for primarily Title I schools and community venues in Sacramento, Placer, and El Dorado counties plus the City of West Sacramento. The children receive a shower timer with water-efficiency tips with each classroom visit. Additionally, in 2024 the program developed a 30-second television and radio Public Service Announcement (PSA), found at https://bewatersmart.info/drip-drop-hip-hop-a-journey-through-the-american-river-watershed/, showcasing local children spreading the water efficiency message to a broader audience in both English and Spanish. In 2024, the PSA was broadcast 1,205 times in 7 television outlets for a total of 5.6 million impressions for an added value of $124,250 and 567 times in 17 radio outlets for a total of 1.2 million impressions and an added value of $45,290. As of the end of 2025, the Drip Drop Hip Hop reached 13,232 students through 509 classroom performances and additional community events in Sacramento, Placer, and El Dorado counties. Of the 509 performances, 25 reached Roseville City School District classrooms. Teachers reported increased water conservation knowledge and that students shared the information with their families.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SPOTLIGHT
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Example of Nonfunctional Lawn
PROMOTION
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Find out more ways your family can save water inside and outside the home.
Water Use Calculator


Compruebe la humedad de la tierra antes de regar para que las plantas estén contentas y sanas.
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SUMMER STRONG
Training Tips with Jack LaPlant
Trees = landscape core strength.
Deep watering with drip lines or soaker hoses keeps them healthy and strong.
Be WATER SMART
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Find tips at BeWaterSmart.info/trees


SUMMER STRONG
Training Tips with Jack LaPlant
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Watering early boosts absorption and minimizes evaporation—like a morning protein shake for your plants.
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YARD CHAMP
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Regional Water Authority
City of SACRAMENTO
Robin
South Land Park
SAVE OUR WATER


SAVING WATER
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BEER
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MORE GREAT WAYS TO SAVE
Set your sprinklers to rise with the sun.
Your yard will drink more and waste less.
Fix household leaks and drip no more,
then savor a rewarding pour.
Replace lawn with native plants.
Cheers to saving water and bees!
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Learn about water-wise rebates and free services at
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SUDS
WOULD BE
DUDS
WITHOUT
H2O
Be WATER SMART

9.2.6 Programs to Assess and Manage Distribution System Real Loss

The City maintains a comprehensive water audit and leak-detection program to assess, identify, and repair potable distribution system losses.

In 2009, the City began using AWWA Water Loss software to develop an annual water loss audit. The City continues to employ this method in compliance with Senate Bill 555, validating the annual audit for accuracy prior to submission to DWR each year by the regulatory deadline of December 31. Results from the audit have helped the City identify where in the distribution process leaks are occurring. This information is coupled with detailed pipeline information stored in the City's asset management and GIS system. Audit information helps identify potentially leak prone areas of the City's distribution system for focused rehabilitation or repair projects.

The City is actively implementing a comprehensive auditory leak detection program, utilizing AMI, Water Distribution staff, and audit-based analysis to identify non-surfacing leaks. By reviewing work order data and evaluating areas with a history of leaks or infrastructure failures, the city can target zones that may be contributing to unquantified water loss. Currently, the City is developing a corrosion protection program designed to reduce future failures and extend the life of the water system. These identified areas are mapped and used to prioritize rehabilitation and replacement efforts. As part of this long-term strategy, the City recently completed Phase 1 of the Downtown Water Main Replacement Project and is preparing to begin Phase 2. This next phase will replace approximately three miles of aging water infrastructure, further strengthening system reliability and reducing water loss.

In combination, these measures and projects employed to identify and reduce system leakage offer the City a comprehensive and proactive approach to the reduction of lost water supply.

9.2.7 Water Conservation Program Coordination Staffing Support

In addition to the employees mentioned in Section 9.2.1, the City employs other individuals as members of the City's internal water conservation program team. Member qualifications include Certified Landscape Irrigation

Auditor (CLIA) certification, Water Distribution Operator D-2 certification, and extensive irrigation system management experience.

In compliance with DWR's UWMP guidelines, the cull contact information for the City's Water Conservation Administrator is listed below:

Bobby Alvarez
Water Conservation Administrator
City of Roseville, Environmental Utilities Department
916-746-1710 (office)
BAlvarez@roseville.ca.us

9.3 Other Demand Management Measures

In addition to the six DMMs described above, the City also implements the following programs:

- Residential Water Wise House Calls
- Residential HET Replacement Program
- Residential Cash for Grass Rebates
- Commercial Irrigation Water "Budgets"
- Commercial Irrigation Audit
- Commercial Cash for Grass Rebates
- Commercial Custom Rebate
- Commercial Irrigation Improvements Rebates
- Commercial Food Service Water Efficiency Rebates
- Commercial Landscape Water Use Reviews
- Commercial Interior Water Use Audits
- Commercial HET Replacement Program

These programs are described in Section 9.3.

9.3.1 Residential Conservation Programs

The City implements several programs to reduce the consumption of water to its residents. The activities of these various programs are described in the following subsections. Implementation of these programs is expected to help the City achieve its water use targets by reducing the amount of water consumed by its residential customers.

9.3.1.1 Water Wise House Calls

The City provides a free home water use inspection service known as the Water Wise House Call Program. Inspections are conducted by trained water conservation technicians and help identify potential water savings for the customer.

Single-family inspections are approximately one hour in length and consist of an indoor and outdoor evaluation. During the interior portion of the inspection, the technician measures flow rates of existing plumbing fixtures

(offering high-efficiency alternatives if necessary), checks all fixtures and appliances for leaks, and provides information on the City's currently available rebate programs (further described in Sections 9.2.2, 9.2.3, and 9.2.4).

Following the indoor evaluation, the technician then conducts an outdoor inspection. A typical outdoor inspection tests sprinkler system efficiency, distribution uniformity, pool equipment, as well as an evaluation for leaks via pressure test. Following the sprinkler test, soil moisture probes are utilized to optimize irrigation scheduling through adjustment of the residence's irrigation controller.

Finally, water use information is reviewed, and the customer is provided with suggested corrective actions, information regarding the City's rebate programs, and educational material on how to further water conservation.

In addition to local advertising, Water Wise House Calls are actively marketed to customers with higher than average water use by the City's Water Efficiency Division. In 2020, modifications were made to this program to adhere to recommended safety procedures in consideration for the global health crisis caused by COVID-19. Adjusted Water Wise House Calls continue to be conducted in a safe manner for both residents and City employees.

9.3.1.2 Residential High Efficiency Toilet (HET) Replacement Program

The City first established a HET rebate program in 2008. Residents can receive up to $100 for replacing an older (pre-1992), non-conserving toilet with a new 1.28 or less gallon per flush model. Rebates are offered on a first come/first service basis to customers on an annual basis, and the program is advertised regularly on bill inserts, conservation articles, newsletters, and the City's website. Customers can also obtain an application by request through the mail or at special events and City office public counters.

9.3.1.3 Residential Cash for Grass

In 2008, Roseville created a turf replacement program titled "Cash for Grass" that provides incentive for customers to replace their turf with water efficient landscaping. Turf is purchased at $1.50 per square foot up to $2,000 per residential site. To comply, participants must not only remove their turf but also install a low-volume irrigation system to irrigate their new water efficient landscape.

9.3.2 Commercial, Industrial, Institutional Conservation Programs

The City implements several programs to reduce the consumption of water to its commercial, industrial, and institutional customers. The activities of these various programs are described in the following subsections. Implementation of these programs is expected to help the City reduce the amount of water consumed by its non-residential customers.

9.3.2.1 Irrigation Water "Budgets"

The City has developed water "budgets" for every dedicated irrigation account (including those owned by the City). These budgets were created using the City's geographical information system (GIS) to determine irrigated landscape area and then field verified for accuracy. Landscape Water Budget Site Reports, produced for customers and included in their normal water bill for a period of 12 months, allow customers to see how their water usage and costs change from month to month allowing them enough time to modify irrigation practices before actual billing on a tiered metered rate structure begins. The proposed 3-tiered rate structure provides an incentive for

customers to stay within their established water budget and a dis-incentive if they use more than their established water budget.

9.3.2.2 Irrigation Audit

Similar to Water Wise House Calls, the City provides a free landscape audit service for irrigation customers upon request. Staff evaluates the irrigation system and makes recommendations for improvement. Rebates are available to further incentivize the customer to make improvements to their irrigation systems.

The City will continue to implement this program and will consider expansion based on the past years' participation.

9.3.2.3 Commercial Cash for Grass

Similar to the Residential Cash for Grass Program, the City offers rebates to commercial customers for replacing turf with water efficient landscaping. Commercial customers can receive $2.00 per square foot.

9.3.2.4 Commercial Irrigation Improvement Rebates

The City offers a suite of rebate opportunities for commercial irrigation customers including for conversion to drip irrigation, high efficiency nozzles, self-adjusting controllers, pressure regulators, as well as installation of irrigation submeters for a total potential rebate value of $15,000 during any fiscal year for those who meet the established criteria for their projects. Applications for these rebates are easily accessed through the City's website with clear outlines of qualifying equipment and labor for ease of submission.

9.3.2.5 Commercial Food Service Water Efficiency Rebates

The City also offers a series of rebates available to commercial customers in the food service industry through which they can apply for applicable benefits on the purchase and replacement of cooking appliances (steamers and combination ovens), sanitation equipment (dishwashers), as well as refrigeration equipment (ice machines) with improved efficiency.

9.3.2.6 Customized Rebate Program

In addition to the above rebates, the Customized Rebate Program helps commercial, industrial, and institutional customers save money with financial incentives on capital expenditures for retrofit of existing equipment with more water-efficient technologies. This program applies to hardware upgrades including equipment and technology for space cooling, refrigeration, laundry, cleaning, and flushing. The customized rebate amount is derived by measuring current usage of the process compared to the water usage of the new retrofitted process. Water savings are estimated using the number of days operated per year and the expected life of the equipment (capped at 10 years). The total amount of water saved is rebated at $0.50 per 100 cubic feet. Rebates will be paid on a first-come, first served basis until program funds are depleted.

9.3.2.7 Commercial Interior Water Use Audit

The Commercial Interior Water Use Audit assists commercial properties in lowering water, wastewater, and energy costs. A facility review identifies equipment inefficiencies and provides a detailed report of all inefficiencies and corresponding recommendations.

9.3.2.8 Commercial High Efficiency Toilet Replacement Program

Similar to the Residential High Efficiency Toilet Replacement Program, commercial customers can receive up to $200 for replacing an older (pre-1992), non-conserving toilet with a new 1.28 or less gallon per flush model.

9.4 Planned Implementation to Achieve Water Use Targets

In most instances, helping customers understand the savings that can be achieved and methods available to achieve these savings is enough to motivate change. Through the above DMMs, the City can help customers identify these savings, which in turn helps the City to achieve its water use targets. Additionally, the City will continue to work with the Parks Department, area school districts, landscape contractors, and property managers to improve water use efficiency.

9.5 Non-Functional Turf (AB 1572)

In 2023, California enacted Assembly Bill (AB) 1572 to reduce the wasteful use of potable (drinking) water and support state policies on water conservation and climate change. The law prohibits using potable water to irrigate nonfunctional turf (NFT) on commercial, industrial, and institutional (CII) properties and common landscape areas of Homeowners Associations (HOAs) starting in 2027. Turf is living ground cover surface of mowed grass (also called lawn, turfgrass or grass). Artificial turf, which is made of synthetic material and not irrigated, is excluded from this law. Artificial turf is used in sports arenas, residential lawns, and various commercial applications.

Functional turf is turf located in recreational areas or community spaces. Examples include:

- Sports fields (soccer, baseball, etc.)
- School recreation areas (playgrounds, running tracks, etc.)
- Areas regularly used for civic or community events (city parks, event centers, etc.)

Nonfunctional turf is turf used only for decoration with no regular recreational or civic use. As a general rule, turf that is accessed only for mowing is likely nonfunctional turf. Examples include:

- Decorative lawn not used for recreation, civic, and/or other community events
- Turf enclosed by fencing or other barriers to permanently block human access for recreation or assembly
- Turf in street rights-of-way and parking lots

The law does not ban turf—it prohibits using potable water on nonfunctional turf. Functional turf may still be irrigated with potable water, and nonfunctional turf may still be irrigated with recycled water. The law allows for the irrigation of trees located in nonfunctional turf with potable water as needed for the health of trees and other perennial non-turf plantings. The new law will be phased in over five years, starting in 2027, based on the type of property. The deadlines in COR Table 9-B are the compliance dates, which means the applicable property must stop irrigating nonfunctional turf with potable water by that date and may not irrigate with potable water in the future. AB 1572 does not apply to private residential properties. This is a permanent prohibition.

COR Table 9-B AB 1572 Compliance Dates

Property Type	Compliance Date
State/local government, local and regional public agencies, public water systems	January 1, 2027
All other institutional, commercial, and industrial properties (not described above)	January 1, 2028
HOA common areas, common interest developments and community service organizations, or similar entities	January 1, 2029
Government/public water system properties in disadvantaged communities	January 1, 2031, or when funding is available to convert NFT, whichever is later

The City is applying focused effort toward compliance with AB 1572 through a comprehensive set of initiatives focused on the removal of non-functional turf. The Parks Division is actively collaborating with other City departments to remove non-functional grass in public areas, administrative buildings, and library grounds, while planning the replacement of ornamental grass strips along City-maintained streets and parking lots. To encourage broader participation from residents and businesses, the City has boosted rebate programs with a tiered incentive structure offering $1.50 per square foot for standard turf removal and a higher $3.00 per square foot for small or narrow areas (under 10 feet wide), which frequently qualify as non-functional turf. Complementing these financial incentives, the Water Wise House Calls program provides approximately 1,000 free on-site consultations each year to help property owners identify non-functional turf and develop compliant retrofit plans. The City has expanded commercial engagement by hiring additional staff to support local businesses with reporting requirements and compliance strategies. These efforts are further supported by the WaterSmart Plant List, an official database on the City's website of low-water-use plants well-suited to the region's climate.

9.6 Members of the California Urban Water Conservation Council

In 1991 (amended September 16, 1999), a memorandum of understanding (MOU) regarding urban water conservation in California was made that formalizes an agreement between DWR, water utilities, environmental organizations, and other interested groups to implement Best Management Practices (BMPs) and make a cooperative effort to reduce the consumption of California’s water resources. This MOU is administered by the California Water Efficiency Partnership (CalWEP).

In 1991, Roseville became a voluntary signatory of CalWEP’s MOU (formerly the California Urban Water Conservation Council or CUWCC). Since becoming a signatory to the MOU, the City has implemented and promoted its water use efficiency programs to help customers reduce water demand. The City reports to CalWEP on its coverage of the recommended BMPs on a calendar year basis.

The Urban Water Management Planning Act (Water Code Section 10631 (j)) allows for an urban retail water agency that is a signatory member of CalWEP to meet the DMM requirements by documenting that CalWEP has determined the urban water agency is complying (coverage) with all of the provisions of the MOU. Documentation of the City’s compliance is provided in Appendix P.

Chapter 10 Plan Adoption and Submittal

This chapter provides information regarding the notification, public hearing, and adoption of the plan.

10.1 Inclusion of all 2025 Data

If a water supplier bases its accounting on a fiscal year (July through June) the data contained in the UWMP must be through the end of the 2025 fiscal year (June 2025). If the water supplier bases its accounting on a calendar year, the data must be through the end of the 2025 calendar year (December 2025).

As indicated in Chapter 1, the City uses a calendar year for the water supply and demand accounting, and therefore this 2025 UWMP includes data through December 2025.

10.2 Notice of Public Hearing

The City provided 60-day notice of the preparation of its 2025 UWMP, and the notice of the 2025 UWMP Public Hearing to the cities and counties listed in DWR Table 10-1.

DWR Table 10-1

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)**
City of Roseville	Yes	Yes
City of Sacramento	Yes	Yes
County Name **Drop Down List**	60 Day Notice **Drop Down (yes/no)**	Notice of Public Hearing **Drop Down (yes/no)**
Placer County	Yes	Yes
Sacramento County	Yes	Yes

Other agencies notified included the following:

- California American Water
- Citrus Heights Water District
- Placer County Water Agency
- Regional Water Authority
- San Juan Water District
- Sacramento Municipal Utilities District
- Sacramento Suburban Water District
- US Bureau of Reclamation

Public hearing notifications for adopting the Plan will be published in the local newspaper (Roseville Press Tribune) and on the City's website. A copy of the published Notice of Public Hearing is included in Appendix B.

10.3 Public Hearing and Adoption

The City has encouraged community and public interest involvement in the Plan update through the use of public meetings and web-based communication. Copies of the City's outreach efforts are included in Appendix B.

On June 17, 2026, public hearings for the Urban Water Management Plan and Water Shortage Contingency Plan will be held. The public hearings provide an opportunity for all City water users and the public to become familiar with the Urban Water Management Plan and Water Shortage Contingency Plan and to ask questions about the plan's contents. In addition, the hearings present an opportunity for the public to learn about or comment on the City's continuing plans for providing a reliable, safe, high-quality water supply. Copies of the draft Urban Water Management Plan and Water Shortage Contingency Plan will be made available for public inspection on the City's website in advance of the public hearings.

Following the public hearings, adoption hearings for the Urban Water Management Plan and Water Shortage Contingency Plan will be held on June 17, 2026, for adoption by City Council in separate resolutions. A copy of the adoption resolution for the 2025 Urban Water Management Plan will be provided in Appendix Q.

The adopted Water Shortage Contingency Plan will be included as Appendix M of this Urban Water Management Plan and a copy of the adoption resolution will be provided in Exhibit C of the Water Shortage Contingency Plan.

10.4 Plan Submittal

A copy of the 2025 UWMP will be submitted to DWR within 30 days of adoption and by July 1, 2026. The adopted UWMP will be submitted electronically to DWR using the California Urban Water Use Efficiency (WUE) data submittal tool. A CD or hardcopy of the adopted 2025 UWMP 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, copies of this 2025 UWMP will be available for public review at the City's public offices. An electronic copy of this Plan will also be available for review and download on the City's website: www.roseville.ca.gov/UWMP.

10.6 Public Implementation

This Plan will be the source document for any Senate Bill 610 Water Supply Assessment or Senate Bill 221 Water Supply Verifications required for any proposed projects between 2026 and 2030 that are subject to the California Environmental Quality Act (CEQA) and would demand an amount of water equivalent or greater than the amount of water by a 500-dwelling unit project. This Plan will also be the source document for water demand projections and water supply availability. Lastly, this Plan 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 Water Conservation Act and the "Making Conservation a California Way of Life" regulatory framework.

10.7 Amending an Adopted UWMP

If the City amends its 2025 UWMP or the Water Shortage Contingency Plan contained therein, copies of amendments or changes to the plans will be submitted to DWR, the California State Library, and any city or county within which the supplier provides water supplies within 30 days after adoption.

10.8 California Water Code Requirements

Demonstration of compliance with all applicable requirements of the California Water Code pertaining to Urban Water Management Plan and Water Shortage Contingency Plan is provided in Appendix R. Appendix R was developed based on the UWMP Checklist provided in the Guidebook and is organized by subject.