



FINAL – JUNE 2026

2025 Urban Water Management Plan

City of
SACRAMENTO

Prepared By:



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2025 Urban Water Management Plan

This 2025 Urban Water Management Plan was prepared under the direction of a California licensed civil engineer.



Executive Summary

Layperson's Description

After the devastating drought in the late 1970s, the California Legislature declared California's water supplies a limited resource, subject to ever-increasing demands and that the long-term, reliable supply of water is essential to protect California's businesses, communities, agricultural production, and environmental interests. The Legislature also recognized a need to strengthen local and regional drought planning and increase statewide resilience to drought and climate change. Thus, in 1983, the California Legislature created the Urban Water Management Planning Act (UWMPA).¹ The UWMPA requires urban water suppliers serving over 3,000 customers or supplying at least 3,000 acre-feet of water annually to prepare and adopt an urban water management plan every five years,² and demonstrate water supply reliability in a normal year, single dry year, and droughts lasting at least five years over a twenty-year planning horizon.³ The UWMPA also requires each urban water supplier to prepare a drought risk assessment and water shortage contingency plan.⁴ And last, beginning in July 2022, each urban water supplier must prepare an annual water supply and demand assessment.⁵ The California Legislature asserts that aggregating all of these legal requirements at the urban water supplier level will improve local, regional, and statewide water planning and water resilience.

At a practical level, the Urban Water Management Plan (UWMP) is the legal and technical water management foundation for urban water suppliers throughout California. A well-constructed UWMP provides the supplier's elected officials, management, staff, and customers with an understanding of past, current, and future water conditions and management. The UWMP integrates local and regional land use planning, regional water supply, infrastructure, and demand management projects as well as providing for statewide challenges that may manifest through climate change and evolving regulations. Thoughtful urban water management planning provides an opportunity for the supplier to integrate

¹ California Water Code (CWC) §10610 *et seq.* (Chapter 1 added by Stats. 1983, Ch. 1009, Sec. 1).

² CWC §10610 *et seq.*

³ CWC §§10631-10635

⁴ CWC §§10632

⁵ CWC §§10632.1

supplies and demands in a balanced and methodical planning platform that addresses short- and long-term planning conditions. In brief, the UWMP gathers, characterizes, and synthesizes water-related information from numerous sources into a plan with local, regional, and statewide practical utility.

ES-1 City of Sacramento

Located at the confluence of the Sacramento River and American River, the City of Sacramento has grown from Gold Rush origins into California's capital and a major metropolitan center. The City's municipal water supply dates to 1849, with the development of California's oldest publicly owned municipal water system, that established a long legacy of water stewardship. Today, water service is provided by the City's Department of Utilities (DOU), which supplies potable water to a diverse mix of customers within the City's municipal service area and adjacent areas within the City's water entitlements' Place of Use. The City also partners with several regional entities to provide wholesale water supply and maintains interties for emergency supply exchange with neighboring agencies. The City's water service area is shown in **Figure ES-1**.

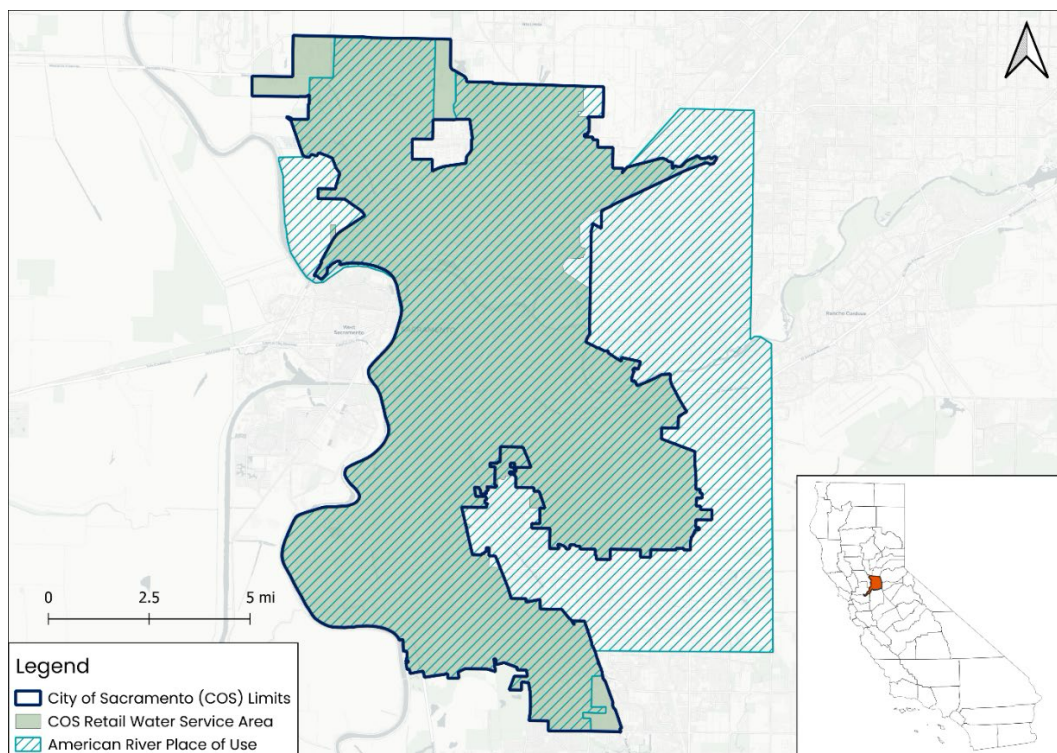


FIGURE ES-1: WATER SERVICE AREA

The City relies on surface water from the Sacramento River and American River watersheds, supplemented by groundwater from the North American Subbasin and South American Subbasin of the Sacramento Valley Groundwater Basin. The City of Sacramento's long-term water management strategy emphasizes regional climate adaptation and watershed resiliency through diversification of supplies, conjunctive use, and coordinated regional partnerships. Increasing hydrologic variability, declining Sierra Nevada snowpack, and more frequent extreme events are addressed by actively managing surface water and groundwater across multiple watersheds and basins. As both a retail and wholesale water supplier, the City's planning framework considers the reliability needs of wholesale customers and integrates future needs into its long-range supply and planning strategies.

The City is a signatory to the Water Forum and Water Forum 2050 Agreements, which establish regionally coordinated commitments to protect the Lower American River while maintaining reliable water supplies through conjunctive use, groundwater stabilization, and adaptive operations. Regional resiliency is further strengthened by participation in the Sacramento Regional Water Bank, which is designed to store water underground during wet years for use in dry years. Recharge and groundwater banking supports drought response, environmental flow needs in the rivers and Delta, and long-term supply reliability. The City's long-term water planning strategy is focused on balancing growth with climate adaptation, environmental stewardship, and wholesale and retail service reliability.

This combination of surface water, groundwater, treatment plants, wells, storage, and transmission infrastructure is important for the operational flexibility needed to serve both current needs and anticipated future growth. Capital improvement planning and new water supply, treatment, conveyance, storage and groundwater projects are critical investments that strengthen system redundancy and maintain reliable retail and wholesale service under future climate and regulatory uncertainty.

ES-2 City of Sacramento Water Service Reliability

The purpose of this UWMP is to verify that the City of Sacramento can reliably meet projected retail and wholesale water demands under a range of hydrologic conditions through 2050. The City is in a position with sufficient water supplies to meet current and growing customer demands. With multiple surface water assets and conjunctive use of groundwater, the City can maintain reliability during drought conditions.

As required by the UWMPA, the reliability assessment includes evaluation of water supply availability and projected water uses in normal, single dry, and five consecutive dry year conditions. The City prepared a Drought Risk Assessment (DRA) that integrates supplies and projected (unconstrained) dry year demands and considers system constraints such as

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diversion limitations and groundwater pumping constraints. The DRA results show that the City has sufficient water assets available under a five-year drought scenario.

Over the recommended 25-year planning horizon, the City's reliability assessment considers constraints on sources and reflects the City's integrated management of its supplies. Overall, as presented in the UWMP's reliability findings, the City of Sacramento has a diverse water supply portfolio that satiates water demands in its service area in normal, single dry, and five consecutive dry years from 2025 through 2050, assuming active management of its supply portfolio.

While the UWMP's analyses demonstrate long term reliability under the statutory planning scenarios, actual future conditions can differ due to hydrologic variability, evolving regulatory requirements, and other constraints. For that reason, the City's approach relies not only on long range planning, but also on operational flexibility across surface water and groundwater sources. The City will continue to evaluate current supply and demand conditions and perform an annual water supply and demand assessment (AWSDA) pursuant to California Water Code §10632.1. Procedures are contained in the City's Water Shortage Contingency Plan (WSCP), and the City will continue this planning exercise to determine near term reliability. The City has updated its WSCP as required by California Water Code §10632 and will implement actions as needed to respond to drought or other water shortage conditions.

Chapter 1

Introduction

At the confluence of the Sacramento and American Rivers, the City of Sacramento (City) has grown from Gold Rush origins into California's capital and a thriving metropolitan area serving over 520,000 residents. Sacramento's municipal water supply dates back to 1849 when its founders established the City's first water diversion from the Sacramento River, leading to the creation of California's oldest publicly owned water supply system in 1854. This early recognition of the importance of a dependable and safe municipal supply established a legacy of water stewardship that continues today.

As the seat of state government and a major economic center, modern Sacramento encompasses diverse sectors including healthcare, education, technology, and agriculture. The City's continued growth, guided by the 2040 General Plan, envisions thoughtful development across opportunity areas from downtown revitalization to expanding suburban communities. However, this prosperity depends fundamentally on reliable water supplies and infrastructure to serve existing and future residents while enabling sustainable expansion in a region characterized by variable precipitation and competing water demands.

Water serves as the foundation for all municipal services, economic development, and quality of life in Sacramento. This 2025 Urban Water Management Plan (UWMP) provides a comprehensive roadmap for ensuring water supply reliability through 2050 and beyond. It evaluates existing water supplies, projects future demands, and outlines strategies to sustain water system resilience and security. This document serves as more than a regulatory requirement—it is a strategic document that guides decision-making about infrastructure planning, land use decisions, and resource management policies, ensuring that Sacramento's water supports both current and future generations.

1.1. Background and Purpose

The Urban Water Management Planning Act (UWMPA) was enacted by the California Legislature in 1983 to address the growing need for comprehensive water supply planning across the state's urban areas. Codified in California Water Code sections 10610–10656, the UWMPA requires urban water suppliers serving more than 3,000 customers or delivering more than 3,000 acre-feet annually to prepare and adopt comprehensive water management plans every five years. The City has prepared this 2025 UWMP to comply with the UWMPA

requirements and support the City's water management planning efforts to assure surface and groundwater supplies are available to meet forecasted retail and wholesale demands over a long-term planning horizon.

As required by the UWMPA, this 2025 UWMP specifically assesses the availability of the City's supplies to meet forecast water uses during average, single-dry, and five consecutive drought years through 2050. Verification that future demands will not exceed supplies and assuring the availability of supplies in dry-year conditions are critical outcomes of this plan. The 2025 UWMP is an update to the City's 2020 UWMP and presents new data and analysis as required by the California Department of Water Resources (DWR) and the California Water Code (CWC or Water Code). Since there have been no updates to the UWMPA since 2020, this UWMP reflects new guidelines and incorporates best practices for water planning in the current regulatory landscape. This comprehensive water planning document describes existing and future supply reliability, forecasts future water uses, presents demand management progress, updates the City's Water Shortage Contingency Plan (WSCP), and identifies local and regional cooperative efforts to meet projected water use.

The UWMP is designed to be a valuable water management and planning tool to guide and inform the City's managers, customers, and the State of California about Sacramento's water management practices. It reflects the City's planning assumptions and goals and should be used in combination with other planning resources and documents over the UWMP planning horizon, representing Sacramento's continued commitment to responsible water stewardship and proactive strategies that protect and preserve the City's water assets, ensure water supply reliability, and promote community and regional prosperity.

1.2. Basis for Plan Preparation

The City operates a Public Water System as described in California Health and Safety Code 116275. The City qualifies as a Retail Urban Water Supplier as described in CWC Section 10617, providing water for municipal purposes to more than 3,000 customers or 3,000 acre-feet of water per year. This qualification requires the preparation of an Urban Water Management Plan every five years.

The City's Public Water System details are listed in **Table 1-1**.

TABLE 1-1: PUBLIC WATER SYSTEM INFORMATION

Public Water System Number	Public Water System Name	Number of Municipal Connections 2025
CA3410020	City of Sacramento Main	~143,000

The State Legislature adopted numerous new requirements for the 2020 UWMP cycle that continue to apply to this 2025 UWMP. However, there have been no additional statutory changes to UWMP requirements between 2020 and 2025. As such, this plan utilizes a similar comprehensive framework that was established in the 2020 UWMP. Major requirements implemented in 2020 and continued in this 2025 UWMP are listed below along with references to the corresponding sections where they are addressed in this document.

Five Consecutive Dry-Year Water Reliability Assessment: Dry-year water reliability planning must be assessed for a "drought lasting five consecutive water years". This statute requires the City to analyze the reliability of its water supplies to meet its water use over an extended drought period. This requirement is addressed in Chapter 3—Water Supply Characterization, Chapter 4—Water Use, and Chapter 5—Water Service Reliability Assessment.

Drought Risk Assessment (DRA): Due to the extensiveness of recent California droughts and the variability associated with climate change predictions, the California Legislature created a DRA requirement for UWMPs.⁶ The DRA requires assessment over a five-year period from 2026 to 2030 that examines water supplies, water uses, and the resulting water supply reliability for five consecutive dry years. The DRA is addressed in Chapter 5—Water Service Reliability Assessment and Chapter 6—Water Shortage Contingency Plan.

Seismic Risk: Evaluating seismic risk to water system infrastructure and facilities and having a mitigation plan is required by the Water Code.⁷ Incorporating the water system into regional or county hazard mitigation planning is an important aspect of this statute. Seismic risk is addressed in Chapter 6.

Water Shortage Contingency Plan: The UWMPA requires a Water Shortage Contingency Plan (WSCP) with specific elements.⁸ The WSCP is a document that provides the City with an action plan for a drought or catastrophic water supply shortage. The WSCP is included in summary form in Chapter 6 of this UWMP and Appendix A in its entirety.

⁶ CWC §10635(b)

⁷ CWC §10632.5

⁸ CWC §10632

Groundwater Supplies Coordination: UWMPs are required to be consistent with Groundwater Sustainability Plans following the 2014 Legislature enactment of the Sustainable Groundwater Management Act (SGMA). The City's groundwater supplies are described in Chapter 3—Water Supply Characterization.

Lay Description: A synopsis of the fundamental determinations of the UWMP is a statutory requirement. This section is intended for new staff, new governing members, customers, and the media, and ensures a consistent representation of the City's detailed analysis.

1.3. Coordination and Outreach

The City has complied with the UWMPA by engaging in proactive coordination with local and regional agencies to ensure a consistent, transparent, and regionally integrated approach to water resource planning. Coordination and communication among agencies are essential for maintaining the reliability, resilience, and sustainability of the region's water supplies. In accordance with CWC Section 10620(d)(3), the City coordinated the preparation of this 2025 UWMP and WSCP with local and regional agencies that share common water sources, manage related infrastructure, or have land use and resource planning responsibilities within or adjacent to the City's service area. Coordination was also conducted among City departments to ensure internal consistency with other planning efforts, including the General Plan and Water Master Plan. The City views this UWMP iteration as a necessary component of its Climate Adaptation and Watershed Resilience program. The City further coordinates with the Sacramento Area Sewer District, which provides wastewater conveyance and treatment services.⁹

The City participates extensively in regional coordination and planning efforts that support regional water resiliency, climate change adaptation, and integrated water management. The City is an active member of the Regional Water Authority (RWA), which represents most of the water providers in the greater Sacramento area and facilitates regional supply planning, drought preparedness, and advocacy on statewide water issues. The City also participates in the Sacramento Groundwater Authority (SGA) and the Sacramento Central Groundwater Authority (SCGA), which oversee groundwater management in the North American and South American Subbasins, respectively. Both agencies are responsible for implementing Groundwater Sustainability Plans (GSPs) that ensure long-term groundwater basin health.

⁹ The Sacramento Area Sewer District merged with Sacramento Regional County Sanitation District January 1, 2024 and operates a consolidated sewer utility.

The City of Sacramento has furthered its regional stewardship by participating in federal and state initiatives. The City is engaging in the pending Healthy Rivers and Landscapes Program (HRL Program) under the State Water Board's July 2025 Draft Water Quality Control Plan for the San Francisco Bay/Sacramento–San Joaquin Delta Watershed.

The United States Bureau of Reclamation (USBR or Reclamation), the City of Sacramento, and several cities and water agencies in the region partnered to complete the American River Basin Study (ARBS) that developed data, tools, analyses, and climate change adaptation strategies specific to the American River Basin.¹⁰ The ARBS examined strategies to integrate and better coordinate local and Federal water management practices to improve regional water supply reliability, while assessing Folsom Reservoir operations to meet flow and water quality standards in the Sacramento–San Joaquin Delta (Delta) and to protect fish species in the Lower American River.

The City is deliberately addressing supply reliability with a comprehensive strategy that addresses risk with a focus on planning, stakeholder engagement, and water management strategies to maintain resiliency and redundancy of supplies across watersheds and groundwater basins. This Climate Adaptation and Watershed Resilience commitment balances long-term water supply reliability with ongoing commitment to public trust resources and environmental stewardship.

In tandem with the 2040 General Plan, the City of Sacramento City Council unanimously adopted the Sacramento Climate Action & Adaptation Plan (CAAP), on February 27, 2024. The CAAP includes goals and actions on water supply and resiliency that incorporate findings from studies like the ARBS and developed an adaptation and action plan that aligns interests with regional water providers and stakeholders for the purpose of improving water supply reliability, availability, and quality in response to climate change.

In addition to these partner agencies and initiatives, the City is a signatory to the Water Forum Agreement, a landmark regional consensus adopted in 2000 that brings together water agencies, environmental groups, business representatives, and local governments to achieve two coequal objectives: (1) provide a reliable and sustainable water supply for the region's long-term needs, and (2) preserve and enhance the environmental values of the Lower American River. The Water Forum serves as a model of cooperative regional water management, guiding groundwater stabilization, surface water use, and habitat restoration programs. Continued participation in the Water Forum ensures that the City's planning remains aligned with regional sustainability goals, environmental stewardship commitments,

¹⁰ U.S. Bureau of Reclamation, American River Basin Study: Interior Region 10 – California Great Basin, August 2022

and the implementation of conjunctive use and drought resilience strategies throughout the Sacramento region. An effort began in April of 2020 to update the Water Forum Agreement, a process in which the City played a leadership role.

The City of Sacramento is a signatory to the recently completed Water Forum 2050 Agreement and its associated Purveyor Specific Agreement. These updated commitments establish a long-term, adaptive framework for balancing water supply reliability with environmental stewardship on the Lower American River. Water Forum 2050 builds on the original 2000 Agreement by explicitly recognizing recent indicators of climate change, hydrologic variability, and the critical role of conjunctive surface water and groundwater management. The agreement emphasizes flexible, year-to-year operational responses; regional coordination through groundwater sustainability and water banking; and continued investment in resilient infrastructure, while reaffirming that Water Forum commitments complement existing water rights and regulatory authorities.

The Water Forum 2050 Agreement maintains the two coequal objectives of providing reliable water supply and protecting the lower American River while incorporating updated strategies to address climate change, regulatory demands, and economic pressures. City Council approved the Water Forum 2050 Agreement and the City's Purveyor Specific Agreement on March 17, 2026.¹¹ The Water Forum 2050 Final Agreement was signed in April 2026.¹²

1.3.1. Water Supplier Information Exchange

In accordance with Water Code Section 10631(h), the City provided information regarding available water supplies to neighboring and retail agencies that currently receive—or may receive—wholesale water from the City. The City does not rely on a wholesale supplier for its own water supply; however, it has agreements to provide wholesale service to several regional entities. These include the Sacramento County Water Agency, Sacramento Suburban Water District, California American Water Company, Golden State Water Company, and the Natomas Unified School District.

Consistent with the UWMPA, the City also requested demand projections and related planning information from these agencies for incorporation into this UWMP and regional planning efforts. This exchange of data supports consistency across water suppliers that share interconnected infrastructure or common groundwater and surface water resources. These coordination activities ensure that regional planning assumptions remain aligned, that

¹¹ <https://waterforum.org/uncategorized/city-of-sacramento-approves-water-forum-2050-agreement/>

¹² https://rwah2o.org/wp-content/uploads/2026/03/6.0-Support-1-WF2050-FINAL-Draft_2026_02_20.pdf

wholesale and retail projections are mutually understood, and that the City’s planning framework supports efficient and reliable service to all customers.

1.3.2. Statutory Requirements for Notice

In compliance with Water Code Section 10621(b), the City provided notification to all affected cities and counties at least 60 days prior to the public hearing on this UWMP update. Additionally, the City conducted outreach to community stakeholders and encouraged the involvement of diverse social, cultural, and economic elements within the service area, as required under Water Code Section 10642. These efforts reflect the City’s ongoing commitment to public transparency and engagement in water resource planning. A summary of these notifications is provided in **Table 1-2**, and copies of the notification letters are included in Appendix B.

TABLE 1-2: PUBLIC AND AGENCY COORDINATION TABLE 1-2.

Coordinating Agencies	Coordinate Regarding Demands	Sent Copy of Draft UWMP	60-Day Notice	Notice of Public Hearing
Sacramento County Water Agency	X	X	X	X
Sacramento County – Planning & Environmental Review			X	X
Regional Water Authority	X	X	X	X
Sacramento Groundwater Authority			X	X
Sacramento Central Groundwater Authority			X	X
California American Water Company	X	X	X	X
Sacramento Suburban Water District	X	X	X	X
Sacramento Regional County Sanitation District			X	X
Sacramento Area Sewer District			X	X
Rio Linda/Elverta Community Water District			X	X
Natomas Central Mutual Water Company			X	X
Florin County Water District			X	X
Tokay Park Water District			X	X
Golden State Water Company	X	X	X	X
City of West Sacramento			X	X
Sacramento County LAFCo			X	X
Water Forum	X	X	X	X
General Public			X	X

In compliance with Water Code Section 10621(b), the City notified the entities listed in **Table 1-2** regarding its intent to update and adopt this 2025 UWMP. The notification was provided more than 60 days prior to the scheduled public hearing, fulfilling statutory requirements.

Furthermore, consistent with Water Code Section 10642, the City encouraged public participation by providing notice of the hearing date, time, location, and methods for accessing the draft UWMP. Notifications were published in local newspapers and sent directly to interested stakeholders to promote inclusive community involvement in the plan's development. The plan was also made available on the City's website:

<https://www.cityofsacramento.gov/utilities/reports>

1.4. Public Hearing, Adoption, and Submittal

In compliance with Water Code Section 10642, the City held a publicly noticed hearing on June 16, 2026, to review and consider adoption of the 2025 UWMP and associated WSCP. The hearing provided an opportunity for community members, partner agencies, and regional stakeholders to comment on the proposed Plan. Following public input, the City Council formally adopted the 2025 UWMP and WSCP by resolution.

Consistent with Water Code Section 10644(a), the adopted Plan was submitted within 30 days to the California State Library, the Cities of Sacramento and West Sacramento, and the County of Sacramento. In addition, the City electronically submitted the Plan and all required data tables to the California DWR prior to the regulatory deadline of July 1, 2026, thereby completing all statutory submittal requirements.

1.5. Document Organization

This 2025 UWMP is organized as follows:

Executive Summary provides an overview of the purpose and findings of this 2025 UWMP.

Chapter 1 establishes the basis for the UWMP, describes the outreach activities and introduces the document organization.

Chapter 2 provides a description of the City's service area, system description, demographic characteristics, climate, energy intensity, and describes the future population the City anticipates needing to serve.

Chapter 3 describes the current and future water supplies and the availability of the supplies through 2050.

Chapter 4 details the customer uses, including the past and future estimated uses, and describes the City's past and on-going demand management measures.

Chapter 5 presents the City's water system service reliability into the future, including an assessment of reliability if a drought occurred over the next five consecutive years.

Chapter 6 is the summary of the City's stand-alone Water Shortage Contingency Plan, incorporated as a chapter in this UWMP. The full WSCP is included in Appendix A and is available to be shared and utilized separate from the UWMP.

Chapter 7 contains the City's water conservation program overview and demand management measures.

NOTE TO DWR:

The City of Sacramento has prepared this Urban Water Management Plan (UWMP) primarily as a water resources planning tool to effectively manage water supply, reliability and demand. This UWMP also satisfies all the requirements of the Urban Water Management Planning Act (UWMPA).

The body of the document provides narratives, analysis and data that DWR requests in its 2025 UWMP Guidebook, including changes to the California Water Code since 2020. Efforts have also been made to include enhancements to this document wherever possible as recommended in the 2025 UWMP Guidebook.

To facilitate review by DWR for compliance with the UWMPA, data from the body of the document has been transferred into required DWR submittal tables consistent with the organization of the tables in Appendix E of the 2025 UWMP Guidebook. These tables are separately uploaded to DWR's web portal. This UWMP has been reviewed for adequacy according to the UWMP Checklist as contained in Appendix F in the 2025 UWMP Guidebook.

Chapter 2

Water Service and System Description

Situated at the confluence of the Sacramento and American Rivers in northern California, the City of Sacramento (City) spans roughly 101 square miles within Sacramento County. The community lies in the heart of the Sacramento Valley, an expansive alluvial plain that forms part of the greater Central Valley watershed. Regional hydrology is shaped by runoff from the Sierra Nevada and Coast Ranges, conveyed through the broader Sacramento River system, its series of storage reservoirs, as well as localized recharge within the surrounding groundwater basins.

The City's service area overlies the North American Subbasin and South American Subbasin, both part of the larger Sacramento Valley Groundwater Basin. These subbasins are characterized by thick, water-bearing alluvial deposits that provide an important and reliable groundwater resource for urban and agricultural uses. The Sacramento and American Rivers form the primary surface water sources for the City's supply system. Collectively, the rivers and underlying basins form an integrated hydrologic system that supports both surface and subsurface supplies for the City and the region.

Water service is provided by the City's Department of Utilities (DOU), which supplies potable water to a diverse mix of residential, commercial, industrial, and institutional customers within the city limits and several adjacent unincorporated areas. Land uses within the service area range from historic urban neighborhoods and high-density downtown developments to suburban residential communities and mixed-use commercial corridors. Residential customers represent the majority of service connections, primarily single-family and multifamily dwellings, while non-residential users include retail centers, offices, hospitals, schools, and state government facilities.

As a full-service municipal utility, DOU oversees water supply, treatment, distribution, and system maintenance to ensure safe and reliable service that meets all state and federal water quality standards. The integrated system combines surface and groundwater supplies through a network of treatment plants, wells, storage reservoirs, and transmission pipelines. This infrastructure supports both current demands and future growth consistent with the City's General Plan, regional sustainability goals, and long-term resource management strategies.

Table 2-1 shows the historical and current service connections by customer class.

TABLE 2-1: RETAIL CUSTOMER WATER SERVICE CONNECTIONS (METERED)

Customer Class	2020	2021	2022	2023	2024	2025
Single-Family Residential	120,051	122,228	123,340	124,038	124,749	125,473
Multi-Family Residential	9,027	9,707	9,689	9,775	10,012	10,032
Commercial/Institutional/Industrial	7,089	7,135	7,200	7,235	7,275	7,280
Landscape Irrigation	2,261	2,369	2,425	2,484	2,574	2,618
Other	0	0	0	0	0	0
Total	138,428	141,439	142,654	143,532	144,610	145,403

The DOU also oversees operation and maintenance of the City’s wastewater collection and storm drainage systems. While the City collects and conveys wastewater from residential, commercial, and industrial customers, treatment and disposal are provided by the Sacramento Area Sewer District (SacSewer) at the EchoWater Resource Recovery Facility (EchoWater), formerly identified as the Sacramento Regional Wastewater Treatment Plant, located near Elk Grove, south of the City along the Sacramento River. The EchoWater Facility provides advanced tertiary treatment for wastewater generated throughout the metropolitan region, discharging treated effluent to the Sacramento River in compliance with state and federal water quality standards. Coordination between the City and SacSewer ensures reliable, compliant wastewater service across the service area.

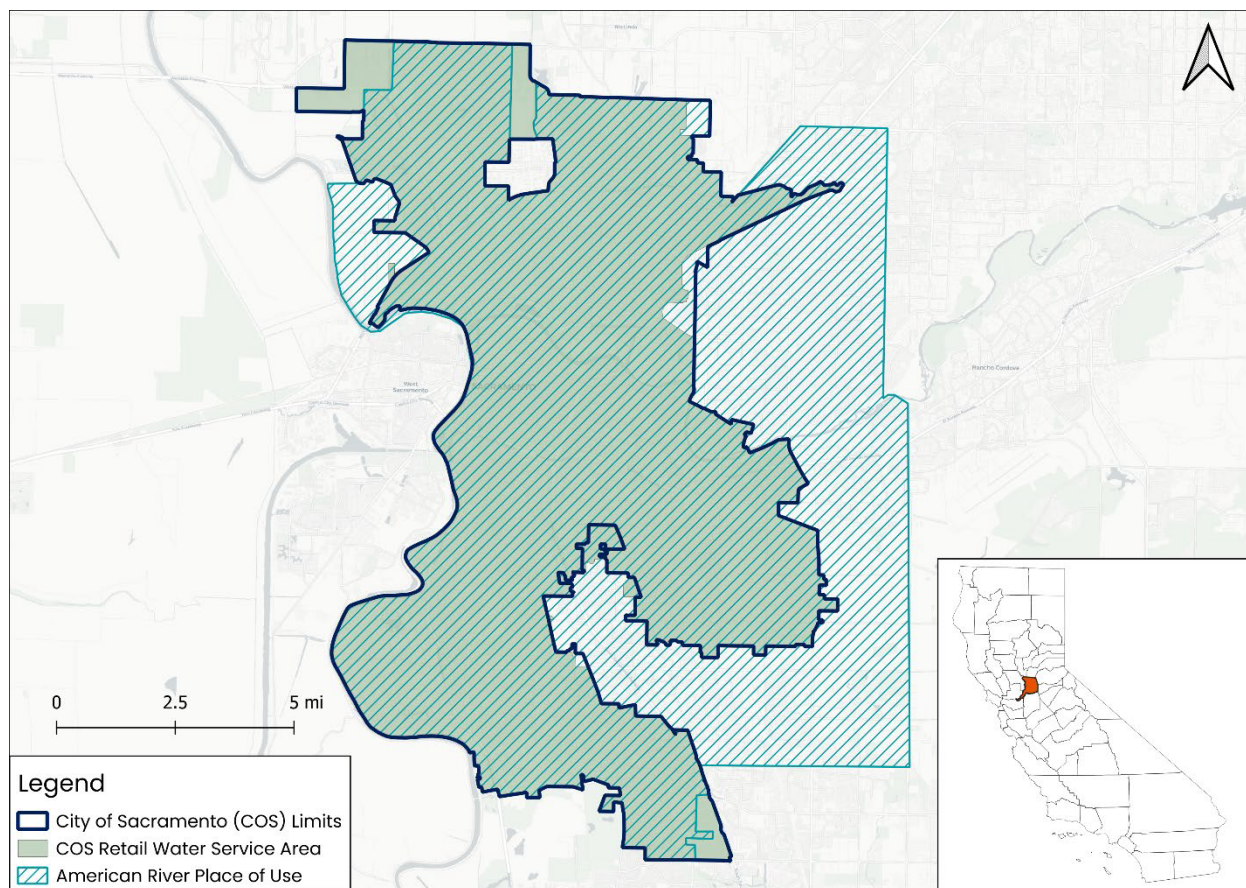


FIGURE 2-1: WATER SERVICE AREA

2.1. Service Area Climate

The City of Sacramento's service area is located in the heart of the Sacramento Valley, approximately 90 miles northeast of San Francisco. The region is characterized by a Mediterranean climate with hot, dry summers and mild, wet winters. Annual temperatures average around 62°F. Annual precipitation averages approximately 20 inches, with the wettest months typically occurring from December through February. During this time, winter temperatures average around 49°F, with overnight lows frequently dropping into the upper 30s to low 40s. The warmest months are July and August, with average summer highs reaching approximately 93°F, and daily maximum temperatures routinely exceeding 90°F.

Figure 2-2 shows the average monthly temperature, rainfall, and evapotranspiration (ET_o) for the service area. Reference ET_o rates fluctuate inversely with temperature, annually averaging approximately 51 inches.

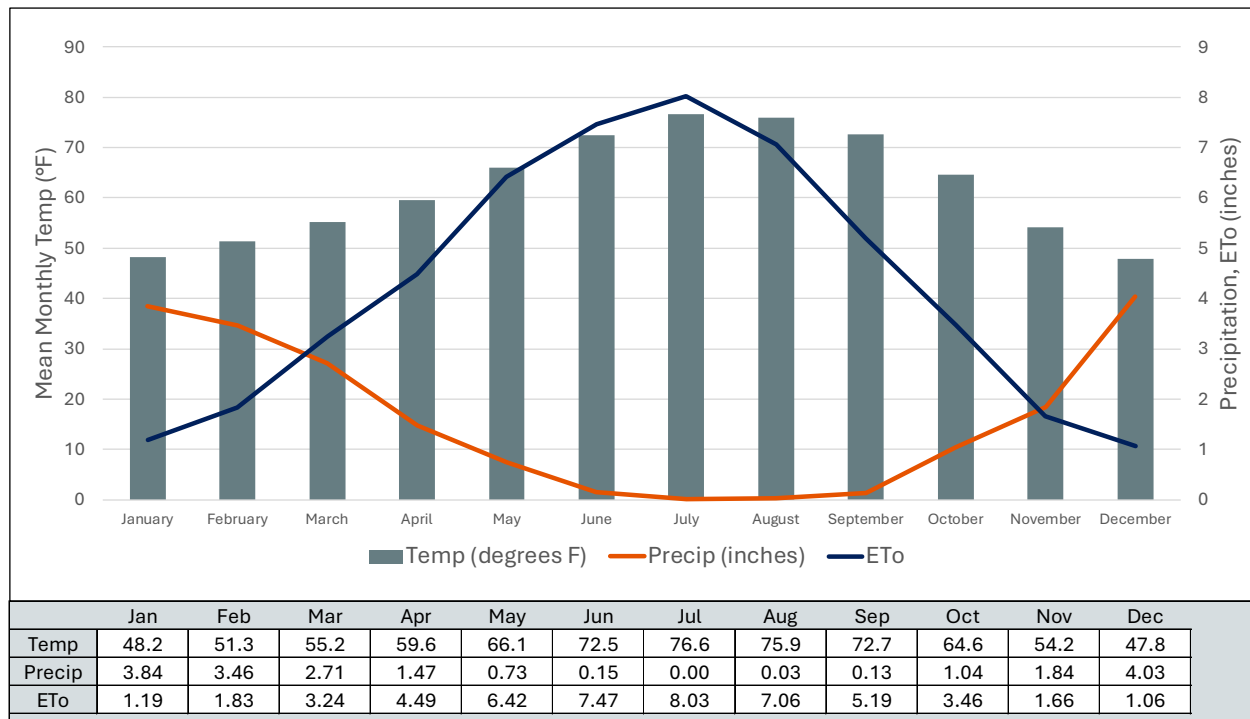


FIGURE 2-2: AVERAGE CLIMATE CONDITIONS¹³

2.1.1. Climate Characteristics

The California Water Code recognizes climate change as an important consideration for water suppliers assessing drought risk, water conservation and use efficiency, and demand management and supply. The City is on the cutting-edge of climate issues through the City's Climate Adaptation and Watershed Resilience framework.

Precipitation patterns in the Sacramento region, shown in **Figure 2-3**, show considerable variability and uncertainty in future projections. While annual precipitation totals may not change dramatically, climate projections suggest a shift toward more intense, less frequent precipitation events.¹⁴

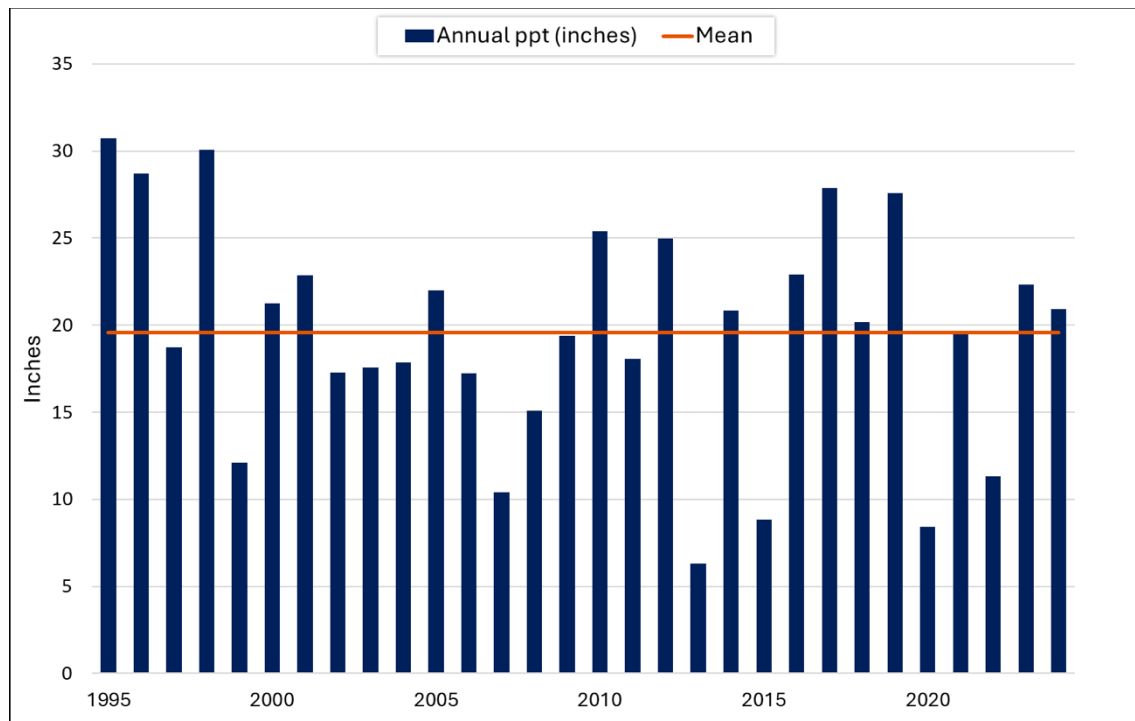
As shown by the trendlines in **Figure 2-4**, the region has experienced gradual warming, with annual temperatures having increased by approximately 2°F since the mid-20th century. This

¹³ Temperature and rainfall data represents annual averages from 1995–2024 from the PRISM Climate Group <https://prism.oregonstate.edu/> Location: Lat: 38.5820 Lon: -121.4898 Elev: 23ft; ETo data is from CIMIS Fair Oaks – Sacramento Valley – Station 131, Jan 1995–Nov 2025.

¹⁴ See Chapter 7.1. *Projected Future Conditions* of the [American River Basin Study](#) (ARBS), a collaborative project between USBR and regional partners to develop basin-specific climate change adaptation strategies.

warming trend will likely continue, with potential temperatures increasing by 4–7°F by the end of the century.¹⁵ Warming temperatures contribute to a decline in the Sierra Nevada snowpack, more precipitation falling as rain rather than snow, and earlier snowmelt – all of which fundamentally alter runoff patterns and water supply availability. As a result, flows into reservoirs will be higher during winter months. However, much of this additional flow cannot be stored effectively as reservoirs approach critical operational thresholds and face stricter flood control levels during the winter.¹⁶ Given the City's reliance on imported water from upstream watersheds, any effect from climate change on Sierra Nevada snowpack and flows into Northern California reservoirs will have a serious impact on water availability for the City. Additional discussion regarding the potential effects of climate change and the City's Climate Adaptation and Watershed Resilience approach are included in Chapter 3, Chapter 4, and Chapter 5.

On the demand side, increasing temperatures and longer, more intense heat waves are likely to increase outdoor water demands even as conservation measures continue to improve efficiency. Demand is discussed in depth in Chapter 4.



¹⁵ ARBS

¹⁶ See Section 1. *Reasons to Assess SWP Water Delivery Capability* of the Delivery Capability Report published by DWR for 2023

FIGURE 2-3: ANNUAL PRECIPITATION VARIABILITY (1920-2025)

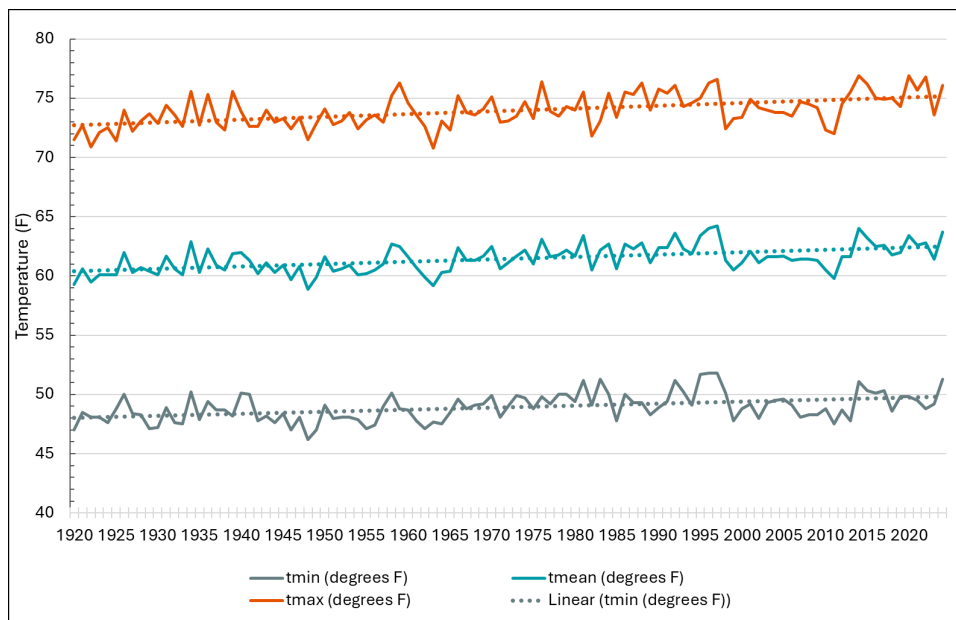


FIGURE 2-4: HISTORICAL ANNUAL AVERAGE TEMPERATURE (1920-2025)¹⁷

2.2. Service Area Boundaries and Jurisdictions

The City of Sacramento provides both retail water service within its service area boundaries and wholesale supply within the City's water rights place of use. This section describes the City's service area and its wholesale customers, including jurisdictions and wholesale water supply arrangements.

2.2.1. Service Area Overview

A secure and robust water supply has been essential for the City's development and continues to underpin sustainable growth and economic expansion. The City operates the oldest public municipal water system in California. As both a retail provider and a water wholesaler, the City provides water to a population of over 527,000 residents, maintains close to 147,000 customer service connections, and has a retail service area of approximately 101 square miles.

¹⁷ Temperature data is from the PRISM Climate Group <https://prism.oregonstate.edu/> Location: Lat: 39.1239 Lon: -121.6174 Elev: 56ft

2.2.2. Retail Service Area

The City's water system delivers treated potable water to residential, commercial (office and mixed use), public/institutional, industrial, irrigation, and other (utilities, parking, misc.) customers within its retail water service area. Retail water service is provided primarily within the corporate limits of the City of Sacramento. The City's retail customers represent a diverse mix of land uses, including low- and high-density residential neighborhoods, commercial corridors, industrial districts, and civic and institutional facilities that reflect the City's role as the capital of California.

While most retail customers are located within City limits, the Department of Utilities also provides water service to a limited number of customers in adjacent, unincorporated areas of Sacramento County. Conversely, a small portion of residents within City boundaries receive water service from the Sacramento Suburban Water District (SSWD); the populations of these two areas are approximately equivalent. In addition, the Sacramento Power Authority (SPA) Cogeneration (Cogen) Facility, located outside City limits, receives both potable and recycled water supplies from the City through dedicated interconnections.

The City's retail water service area has varying density while future development and infill are expected to occur consistent with the City's General Plan. The City also anticipates the service area to continue to grow and the service area boundary to be augmented throughout the planning horizon of the UWMP and well beyond.

Current growth projections gathered from the 2040 General Plan and 2023 Water Master Plan identify 68 designated Opportunity Areas distributed within and around the City that represent potential residential, commercial, and mixed-use development zones. These areas are expected to accommodate both population and employment growth over the next two decades.

The City's municipal retail water service area boundaries are generally consistent with the City's boundary. However, wholesale water service is supplied consistently with the place of use (POU) under its appropriative and pre-1914 water rights that includes adjacent areas authorized for service under State Water Resources Control Board (SWRCB)-approved maps extending outside of current City limits. Future updates to the POU may be coordinated with SWRCB and the Water Forum to reflect changes in land use or boundary adjustments associated with annexations or retail and wholesale service extensions.

2.2.3. Wholesale Service Area

In addition to retail water service within City limits, the City of Sacramento provides wholesale water deliveries to neighboring agencies and customers in Sacramento County through a

series of long-term agreements. Wholesale supplies are delivered primarily from the City's surface water treatment plants via dedicated interties and transmission mains. Wholesale customers include the Sacramento County Water Agency (SCWA), Sacramento Suburban Water District (SSWD), California American Water (Cal Am), and the Natomas Unified School District (NUSD), with potential for others in the future. These partnerships support regional water supply reliability, optimize surface water use under the City's American River and Sacramento River rights, and enhance regional water resources during varying hydrologic conditions. The City also treats and wheels water to Sacramento County Water Agency's Zone 40. Wholesale customer water use is described in Chapter 4.

Much of the wholesale delivery area is defined by the authorized POU for the City's American River water rights. Moreover, the City is a stalwart of regional water supply reliability in its capacity as a water wholesale provider and retail service provider. The City's water entitlements are discussed further in Chapter 3.

The City currently delivers wholesale water through several metered turnouts that border the City's retail service area. The City uses the same surface water treatment facilities, groundwater wells, storage tanks, pumping facilities, and distribution/transmission pipelines to deliver water to wholesale customers. The turnouts are in addition to emergency connections that the City has with adjacent agencies.¹⁸ The City's wholesale and wheeling customers are described below. A map of current wholesale customers and their service areas is shown in **Figure 2-5**.

Sacramento County Water Agency

The Sacramento County Water Agency (SCWA) was established in 1952 and provides water service to portions of Sacramento County through multiple zones of benefit. The City of Sacramento maintains both wheeling and wholesale water supply agreements with SCWA, under which the City treats and conveys potable water to SCWA service areas using City transmission and treatment facilities.

Under the 2000 Wheeling Agreement¹⁹, the City treats and conveys SCWA-owned surface water supplies for use within portions of SCWA's service areas, including the Laguna and Vineyard areas historically associated with Zone 40, via an interconnection near Franklin Boulevard at the southern boundary of the City. Deliveries under this agreement constitute wheeled water and are not considered wholesale sales of City water.

¹⁸ The City maintains numerous emergency interties with agencies around its service area. Not all are identified in this wholesale agency section.

¹⁹ Agreement for Use of Sacramento River Water Treatment Plant Facilities to Wheel Surface Water, dated April 4, 2000.

Under the 2004 Wholesale and/or Wheeling Water Service Agreement²⁰, the City provides long-term potable water service to the Sacramento International Airport and Metro Air Park (MAP) area through a separate interconnection located at Bayou Road near the airport. Water deliveries under this agreement may occur either as wholesale deliveries of City water or as wheeled deliveries of SCWA-owned water, depending on the source of supply. Within SCWA, the Airport and MAP service area is operated as part of SCWA's retail system and is associated with Zones 41 and 50, with Zone 50 established primarily to fund capital facilities serving MAP. The City and SCWA have multiple interconnections to the Northgate service area and are exploring service deliveries to this area. Another unmetered emergency intertie for the SCWA airport region at Meister Way is currently under construction as of the writing of this UWMP.

Water delivered to SCWA is recorded and reported by the City based on service area and/or turnout location, including deliveries to the Laguna/Vineyard area, Sacramento International Airport, and Metro Air Park. Only deliveries of City water are classified as wholesale supplies; wheeled water is excluded from wholesale demand accounting.

Contractually, the 2000 Wheeling Agreement establishes a maximum wheeling capacity of up to 11 MGD (12,322 AFY). The 2004 Airport/Metro Air Park Agreement establishes an initial operational delivery capacity of up to 5 MGD (5,600 AFY), expandable to a maximum of 11.7 MGD (13,106 AFY) with at least 18 months advance notice from SCWA and completion of required facilities and fee payments.

Separately, the City and SCWA entered into a 2014 Emergency Water Service Agreement to allow temporary emergency deliveries from SCWA to the City during the City's Water Treatment Plants Rehabilitation Project. This agreement provides an emergency-only backup supply and remains separate from the City's wholesale and wheeling agreements. The City and SCWA are also party to the ARTESIAN Agreement described later in this section.

Sacramento Suburban Water District

The Sacramento Suburban Water District serves approximately 180,000 residents in four service areas within Sacramento County.²¹ Under a 2004 wholesale water supply agreement, the City provides up to 20 million gallons per day (MGD) (22,400 AFY) of American River surface water, plus an additional 10 MGD under certain conditions. Water deliveries to SSWD's South Service Area (SSA) began in 2007, consistent with the American River Place of Use

²⁰ "Agreement Between the City of Sacramento, the County of Sacramento and the Sacramento County Water Agency for Wholesale and/or Wheeling Water Service for Sacramento International Airport and Metro Air Park", dated October 12, 2004.

²¹ City of Sacramento, *Water Master Plan Update* (2023)

(POU). The City and SSWD maintain seven interties, including a primary delivery intertie near Howe Avenue and Northrop Drive and six additional connections used for emergency and operational support.

Also prompted by the City's Water Treatment Plants Rehabilitation Project in 2013, SSWD and the City entered into a similar emergency agreement, which allows SSWD and the City to assist in times of need. Since the preparation of the 2020 UWMP, SSWD now serves the Del Paso Manor Service Area (DPMSA), following the dissolution of Del Paso Manor Water District.

California American Water Company

California American Water, a subsidiary of American Water, operates ten service areas within Sacramento County serving approximately 225,000 residents.²² The City provides wholesale supply to the Arden, Parkway, Suburban, Rosemont, and Fruitridge Vista service areas.

The City and Citizens Utilities Company of California (CUCC) first entered into a wholesale agreement in 1997 for the Parkway area. As the successor to CUCC, Cal-Am modified this agreement in 2010 to establish both firm and non-firm capacity deliveries, providing 2.3 MGD (2,580 AFY) of firm supply and 3.46 MGD (3,880 AFY) of non-firm supply during off-peak periods (October 15 through May 14), with deliveries not to exceed 4,831 AFY.²³ Deliveries may be made to any of the three eligible service areas within the POU. The 2010 agreement with Cal-Am supersedes their inherited 1977 agreement, previously referred to as the Southgate Agreement.

In February of 2020, Cal-Am acquired the Fruitridge Vista Water Company (FVWC), previously served by the City under a separate wholesale contract. The City's 2007 wholesale agreement with FVWC transferred to Cal-Am Fruitridge upon acquisition. The new Cal-Am Fruitridge service area, now substantially built out, receives a firm capacity of 3.24 MGD (3,630 AFY) under an agreement that allows for reductions during certain hydrologic conditions.

The City maintains five active interconnections serving Cal-Am:

- "A" Parkway and Franklin Boulevard (Parkway Service Area)
- Terminal end of a 24-inch main on Folsom Boulevard (Rosemont Service Area)
- 47th Avenue (western edge of Cal-Am Fruitridge Service Area)
- Fruitridge Boulevard and Sampson Avenue (Cal-Am Fruitridge Service Area)
- Howe Avenue and Alta Arden Expressway (Arden Service Area).

²² City of Sacramento, *Water Master Plan Update* (2023), West Yost.

²³ Ibid.

In addition to the active interconnections, there are five emergency interties to the Cal-Am Fruitridge Vista area, three emergency interties south of the Cal-Am Fruitridge Vista area, and one emergency intertie shared with Sac Suburban Water District in the Arden Service Area.

Natomas Unified School District

In 2019, the City entered into a wholesale agreement with the Natomas Unified School District (NUSD) to provide a maximum of 0.245 mgd, or about 274 acre-feet annually, of water supply to the Paso Verde K–8 School located just outside the City limits. The service connections are located near the intersection of Snelling Lane and Westlake Parkway at the edge of the City limits. The City provides wholesale deliveries to NUSD through standard retail connections but accounts for the use as wholesale.

ARTESIAN Agreement

The American River Terms for Ecosystem Support and Infrastructure Assistance Needs (ARTESIAN) project agreement was entered into by the Regional Water Agency (RWA), the City, and other RWA Members as part of the American River region's still pending "Volunteer Agreement" proposal associated with the State's Bay-Delta Water Quality Control Plan (see Chapter 3 for more discussion). ARTESIAN is one of the City's conjunctive use programs, designed to strategically coordinate usage of surface water and groundwater resources. The ARTESIAN agreement includes funding from DWR and California Natural Resources Agency (CNRA) for groundwater infrastructure projects. In return, the City and other participating RWA Members are required to make up to 30,000 acre-feet of water available to the ecosystem during a Call Year. A Call Year is a dry or critical water year when the State triggers the ARTESIAN program and requires participating agencies to use groundwater instead of surface water, leaving that surface water in the American River for environmental flows.²⁴

The City also maintains an agreement with SSWD and SCWA to ensure surface water is available for environmental releases. SSWD and SCWA agree to reduce the City's surface water diversions under their respective wholesale agreements by either delivering pumped groundwater directly to the City, or foregoing use of the City's surface water under its water rights which the City would otherwise divert, treat, and provide to SSWD, SCWA, and its own customers. SSWD and SCWA would instead pump banked groundwater to make up these surface water supplies in Call Years, and surface water would not be diverted from American River and be left in-stream for environmental purposes.

²⁴ Dry and Critical year types under the ARTESIAN agreements are determined using the State's Sacramento Valley Index pursuant to the Revised SWRCB Decision 1641, and those classifications establish eligibility—but not an automatic requirement—for a Call Year.

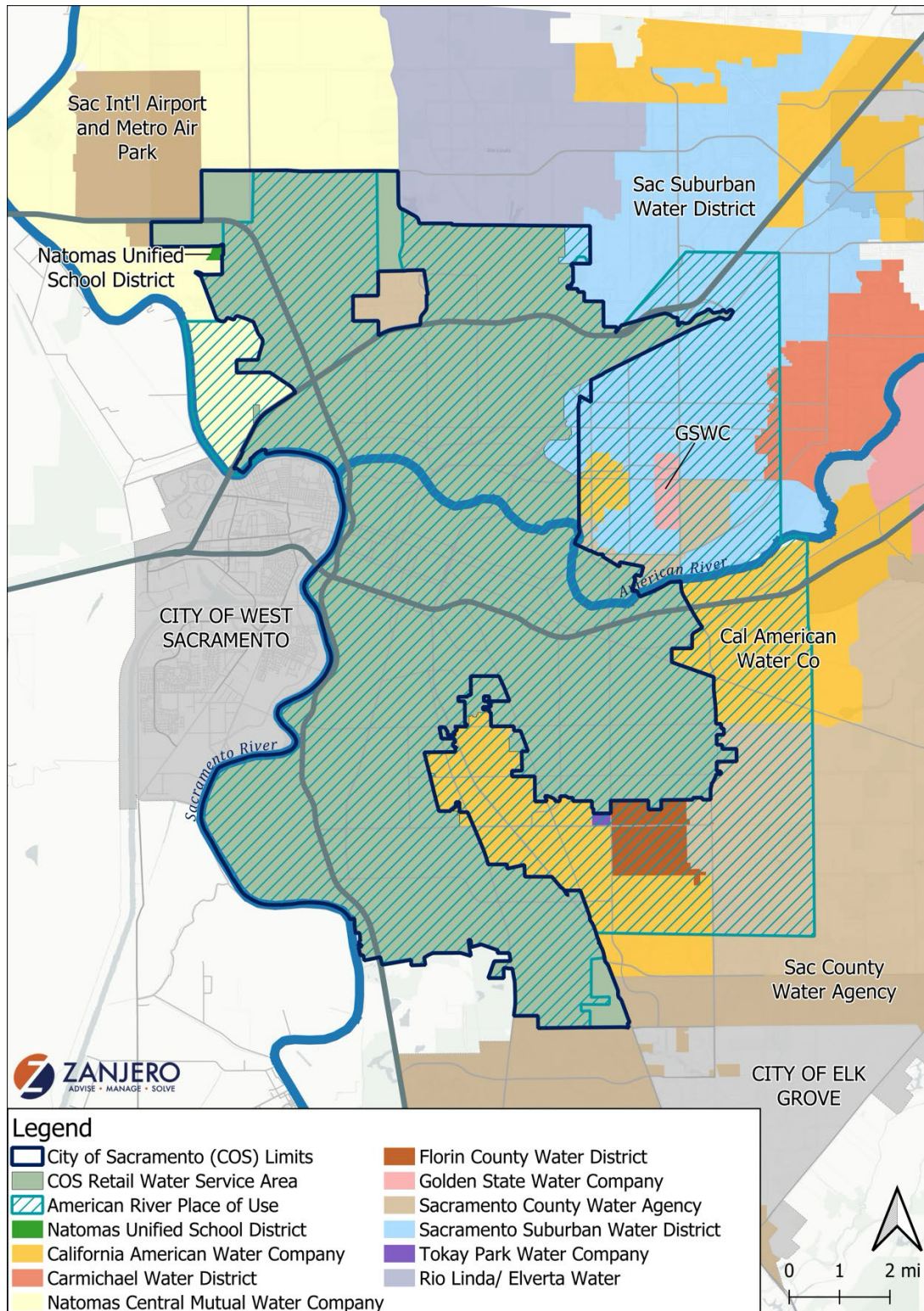


FIGURE 2-5: CITY AND WHOLESALE CUSTOMER SERVICE AREAS

Future Wholesale Customers

The City's wholesale demand is expected to increase to serve existing customers under current contracts and future agreements. For example, the City and SSWD discussed a potential surface water supply agreement to serve SSWD's North Service Area, which comprises the territory of the former Northridge Park County Water District. A 1979 agreement between the City and Northridge Park County Water District provided for up to 9,023 AFY of Area D American River supply, but that agreement was never activated and is considered by the City as expired. In 2018, the City expressed willingness to negotiate a new North Service Area supply agreement, subject to conditions including SSWD's assumption of applicable Area D service and water right permit costs, as well as environmental review and curtailment obligations. As of the drafting of this plan, an agreement has not yet been reached. For planning purposes, however, the City expects wholesale water service to SSWD's North Service Area, discussed below as Northridge, will eventually be established.

The 2023 Water Master Plan Update identifies additional future wholesale customers and demand, differentiated by those likely to receive water by 2030 based on master plans and agency communications, versus the capacities the City can provide to agencies within the American River POU by 2040.²⁵

Expanding conjunctive use is an important part of the region's collective supply resiliency strategy. This is underscored by wide participation in the Sacramento Regional Water Bank (SRWB), led by Regional Groundwater Authority (RWA). The City and regional partners are coordinating on expanding conjunctive use and in-lieu recharge through the SRWB. Utilizing the City's surface water rights under wholesale arrangements to meet future demands in the American River Place of Use would allow the City's regional partners, including Cal-Am, Golden State, SCWA, SSWD, Carmichael Water District, and RWA, to bank groundwater through in-lieu recharge or aquifer storage and recovery (ASR) during favorable hydrologic conditions. More discussion on the SRWB can be found in Section 2.4 and Chapter 4.

Existing and potential wholesale customers are shown in **Table 2-2** and discussed further in Chapter 4.

²⁵ City of Sacramento Water Master Plan Update, January 2023. Section 3.6.

TABLE 2-2: EXISTING AND POTENTIAL WHOLESALE CUSTOMERS²⁶²⁷

Wholesale Entities	
Cal-Am	Cal-Am Arden
	Cal-Am Fruitridge Vista (47th and Sampson)
	Cal-Am Parkway
	Cal-Am Suburban (Folsom)
	Cal-Am Rosemont
SCWA	SCWA International Airport
	SCWA Zone 50 Metro Air Park
	SCWA Zone 40
	SCWA Arden Park*
	SCWA Northgate*
SSWD	SSWD Sac Suburban (Northrop)
	SSWD Sac Suburban (Arden)*
	SSWD Sac Suburban (Northridge)*
	SSWD Sac Suburban (Del Paso Manor)*
NUSD	Natomas Unified School District
Other	Golden State Water Company*
	Tokay Park*
	Florin County Water District*
	Carmichael Water District*

*Potential wholesale customers and/or service areas. The City does not currently deliver water to these areas within its American River POU but may in the future.

As previously discussed in Section 2.2.3, the City’s wholesale water delivery area is defined by its American River water rights Place of Use. Future wholesale service not contemplated in **Table 2-2**, and which is beyond the 2050 UWMP planning horizon, is expected to expand and is addressed in a long-range planning assessment in Chapter 4.

²⁶ City of Sacramento, *Water Master Plan Update* (2023), Table 3-16.

²⁷ SCWA, 2020 UWMP (2021), Table 4-11.

2.3. Current and Projected Population, Land Use, Economy, and Demographics

Service area population and land use projections are critical to developing a useful planning framework, as population dynamics and growth are a primary driver on water use. These projections directly influence planning decisions for system supply, delivery, infrastructure, and demand management. Similarly, understanding the City's economic, social, and demographic trends is requisite for water management and planning. This section of the UWMP addresses these factors to provide a supportable basis for forecasting future water use.

Developing these planning frameworks and growth projections begins with calculating an informed estimate of the City's current service area population, consistent with DWR requirements. There are multiple approaches to developing this estimate; however, because the City's boundaries correspond by 95% or more with the City's water service area, population estimates prepared by the California Department of Finance were used.

2.3.1. Current Population and Historic Trends

Formally established in 1849, the City grew rapidly from its origins as a supply hub during the Gold Rush. From a population of approximately 9,087 in 1850, the City grew rapidly and was designated as the permanent state capital in 1854. Its strategic location as a river port, agricultural processing center, and major rail hub following the completion of the transcontinental railroad in 1869 drove continuous population growth throughout the late nineteenth and early twentieth centuries. Early growth was characterized by infrastructure investments completed during the second half of the 1800s in response to catastrophic fires and repeated floods, with this subsequent rebuilding supporting residential and commercial growth. By the turn of the twentieth century, the expansion of streetcar lines enabled the growth of Sacramento's first suburban neighborhoods, extending the City outward.²⁸

Following World War II, the City experienced rapid annexation and suburban expansion. The City's current boundaries encompass approximately 101 square miles. Today, Sacramento is the sixth largest city in California and the county seat of Sacramento County, with a current (2025) service area population of approximately 527,979, as estimated by the California Department of Finance.

²⁸ City of Sacramento, *City-Wide Historic Context* (Sacramento: City of Sacramento Planning Department, Urban Design & Preservation Division, 2019), PDF file, accessed February 14, 2026, <https://www.cityofsacramento.gov/content/dam/portal/cdd/Planning/Urban-Design/Preservation/Adopted-Historic-District-Plans/City-Wide-Historic-Context.pdf>

As previously mentioned, because the City's service area overlaps the municipal area by over 95%, California Department of Finance (DOF) population estimates were used to estimate service area population. Importantly, the differences in population values and growth rates between the 2023 Water Master Plan and the 2025 UWMP reflect the California Department of Finance's "Error of Closure" adjustment, which revised intercensal estimates for 2010–2020 to reconcile annual projections with actual 2020 Census counts. This recalibration redistributed the statistical difference between the Demographic Research Unit test estimates and census data across the decade, resulting in slightly different annual population figures and corresponding growth rates for the same historical years.

Historical population dating back to 1990 is shown in **Table 2-3**.

TABLE 2-3: HISTORICAL POPULATION²⁹

1990	1995	2000	2005	2010	2015	2020	2025
369,365	383,720	406,397	442,662	466,488	487,984	520,252	527,979

Annual population growth rates over the 2015–2025 period have generally ranged from approximately 0.3 to 1.6% per year, with a brief contraction of -0.88% in 2020, likely reflecting Census-period methodology and COVID-19 related demographic shifts, followed by continued moderate positive growth through 2025. **Table 2-4** presents these annual population values and growth rates.

TABLE 2-4: POPULATION GROWTH RATE, YEARS³⁰

2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
487,984	492,275	498,376	504,737	511,893	520,252	515,673	518,333	521,871	526,327	527,979
1.09%	0.88%	1.24%	1.28%	1.42%	1.63%	-0.88%	0.52%	0.68%	0.85%	0.31%

²⁹ 1990–2025 data from State of California, Department of Finance, E-8 Historical Population and Housing Estimates for Cities, Counties, and the State, 1990–2000 (August 2007), 2001–2010 (November 2012), 2010–2025 (May 2025). 2020–2025 data from State of California, Department of Finance, E-4 Population Estimates for Cities, Counties, and the State, 2021–2025, with 2020 Census Benchmark. Sacramento, California, May 2025.

³⁰ 2015–2025 data from State of California, Department of Finance, E-8 Historical Population and Housing Estimates for Cities, Counties, and the State, 2010–2025 (May 2025). 2020–2025 data from State of California, Department of Finance, E-4 Population Estimates for Cities, Counties, and the State, 2021–2025, with 2020 Census Benchmark. Sacramento, California, May 2025.

2.3.2. Projected Population

To forecast projected service area population as accurately as possible requires consideration of the past growth rate, local economic predictions, and current and projected land uses. The UWMP Act states urban water suppliers “shall coordinate with local or regional land use authorities” regarding land uses that may affect water management planning.³¹

The City’s projected population is estimated using residential growth forecasts from the City’s 2040 General Plan, updated to include actual census counts for 2025 and growth associated with new developments within the City limits that were not previously considered. More specifically, the City’s 2040 General Plan and Climate Action & Adaptation Plan forecasted the construction of 69,012 new residential units by 2040.³² This approximation was then updated to include 1,163 new residential units associated with the Stone Beetland Development, which can be translated to an increase in population by assuming a factor of 2.573 people per dwelling unit.³³ This occupancy rate is obtained from DOF 2025 E-5 population estimates table for the City of Sacramento. Housing units and population counts from this table for 2025 were also used as a stepping-stone, adjusting the rate of increase in housing units presented in the General Plan to reflect existing conditions. Although one other development, Aspen 1, was proposed within the City limits, the City indicated that this development will be industrial with no associated residential growth.³⁴ The resulting population is presented in **Table 2-5**.

TABLE 2-5: POPULATION FORECAST, 2025-2050

2025	2030	2035	2040	2045	2050
527,979	577,372	623,856	670,339	716,823	763,306

Looking forward, the City’s retail service area population is projected to reach approximately 577,372 by 2030 and 670,339 by 2040, consistent with the adjusted growth projections from

³¹ CA Water Code Section 10631(a)

³² City of Sacramento, *Sacramento 2040 Project Master Environmental Impact Report* (Sacramento: City of Sacramento Community Development Department, 2023), PDF file, accessed February 14, 2026. <https://www.cityofsacramento.gov/content/dam/portal/cdd/Planning/General-Plan/2040-General-Plan/Sacramento-2040-Project-MEIR-8242023.pdf>

³³ The project site is located in south Sacramento and is generally bounded by Cosumnes River Boulevard to the south, Morrison Creek to the east, the extension of 24th Avenue to the west, and adjacent City-owned vacant land to the north, and includes the Morrison Creek Sacramento Regional Transit light rail station.

³⁴ The Aspen 1-New Brighton project is an approved 232-acre mixed-use development at Jackson Road and Watt Avenue in Sacramento.

the City's 2040 General Plan. These projections reflect infill development and development within the City's designated opportunity areas.

Not considered within this projection are longer-horizon growth associated with potential developments outside of the City's service area and municipal boundary. One such development, the Natomas Joint Vision Study Area (NJVA), was previously considered theoretically in the 2023 Water Master Plan Update and was anticipated to support a 2040 projection of approximately 695,830 people. Were the City to provide services to the Natomas Joint Vision Study Area, or other land uses described in Section 2.3.3, or if others should arise, this population forecast would be updated to reflect additional service area population associated with these areas. At this time, no growth in this area is characterized in this UWMP.

When considering a long-range planning horizon beyond the 2050 UWMP range, the City could expect continued growth with infill, higher density developments, annexations, and population shifts that could realistically eclipse one million people within the City boundaries by the end of the century.

2.3.3. Current and Projected Land Use

This section examines the current and projected land uses within both the City's retail and wholesale service areas. To maintain consistency with past and current demand projection efforts, the methodology used in the 2023 Water Master Plan largely served as the basis for the preparation of this document. Thus, the foundational components of that methodology including projected land uses within the retail and wholesale areas discussed within this section align with those presented in the 2023 Water Master Plan.

Current Land Use Within the Retail Service Area

The City of Sacramento has served as a hub for recreation, business, and transportation since the Gold Rush. As detailed in the City's 2040 General Plan, development was historically centered around the Sacramento River but expanded significantly following the completion of various flood control projects. The City is now approximately 86% developed within its current boundaries, with the dominant land use being residential³⁵. The breakdown of existing land uses is presented in **Figure 2-6**, and **Figure 2-7** shows the current City structure.³⁶

³⁵ 2023 Water Master Plan Update

³⁶ Both figures sourced from the Land Use and Placemaking Element of the City's 2040 General Plan

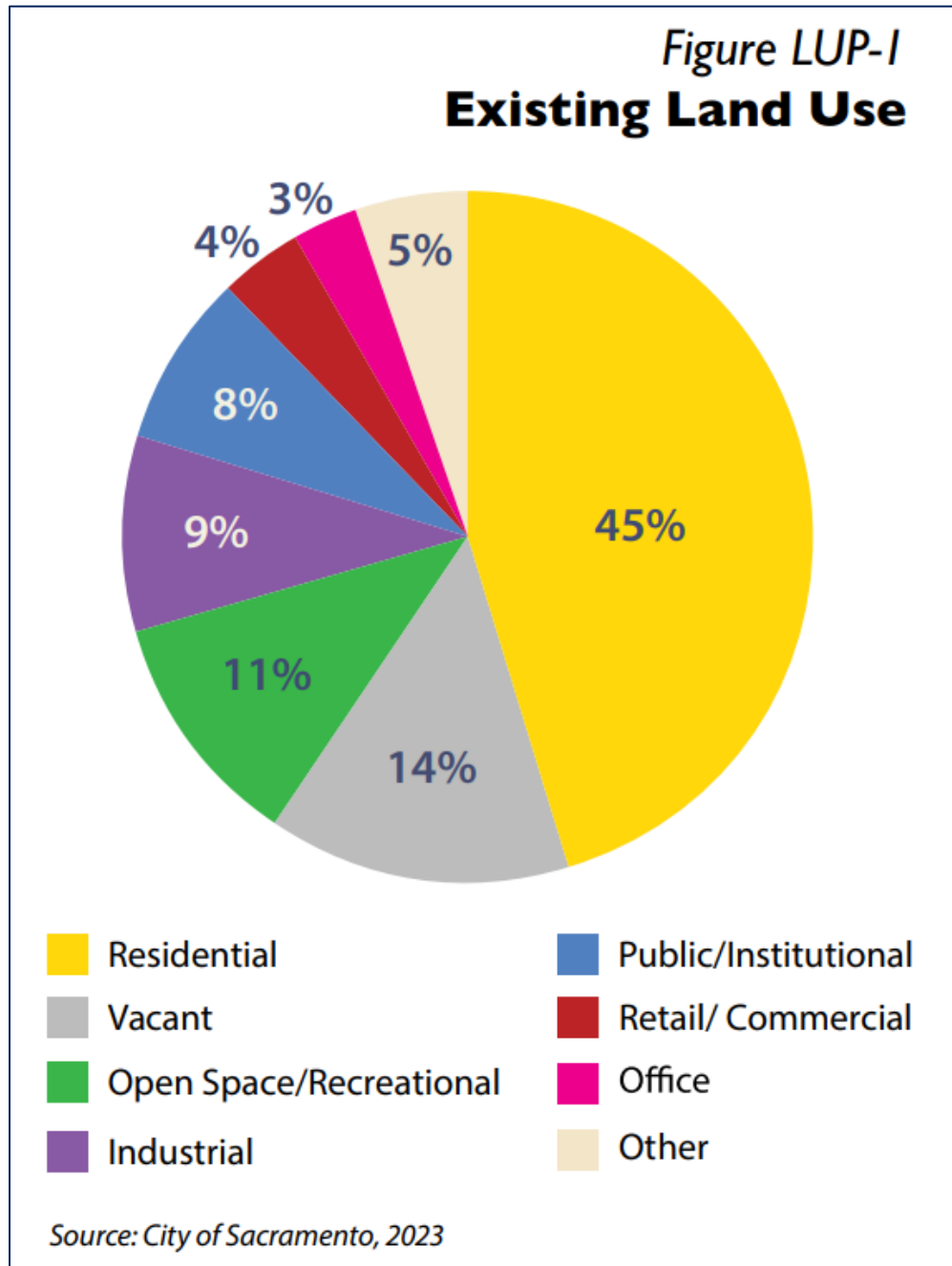


FIGURE 2-6: EXISTING LAND USE PIE CHART (2040 GENERAL PLAN)

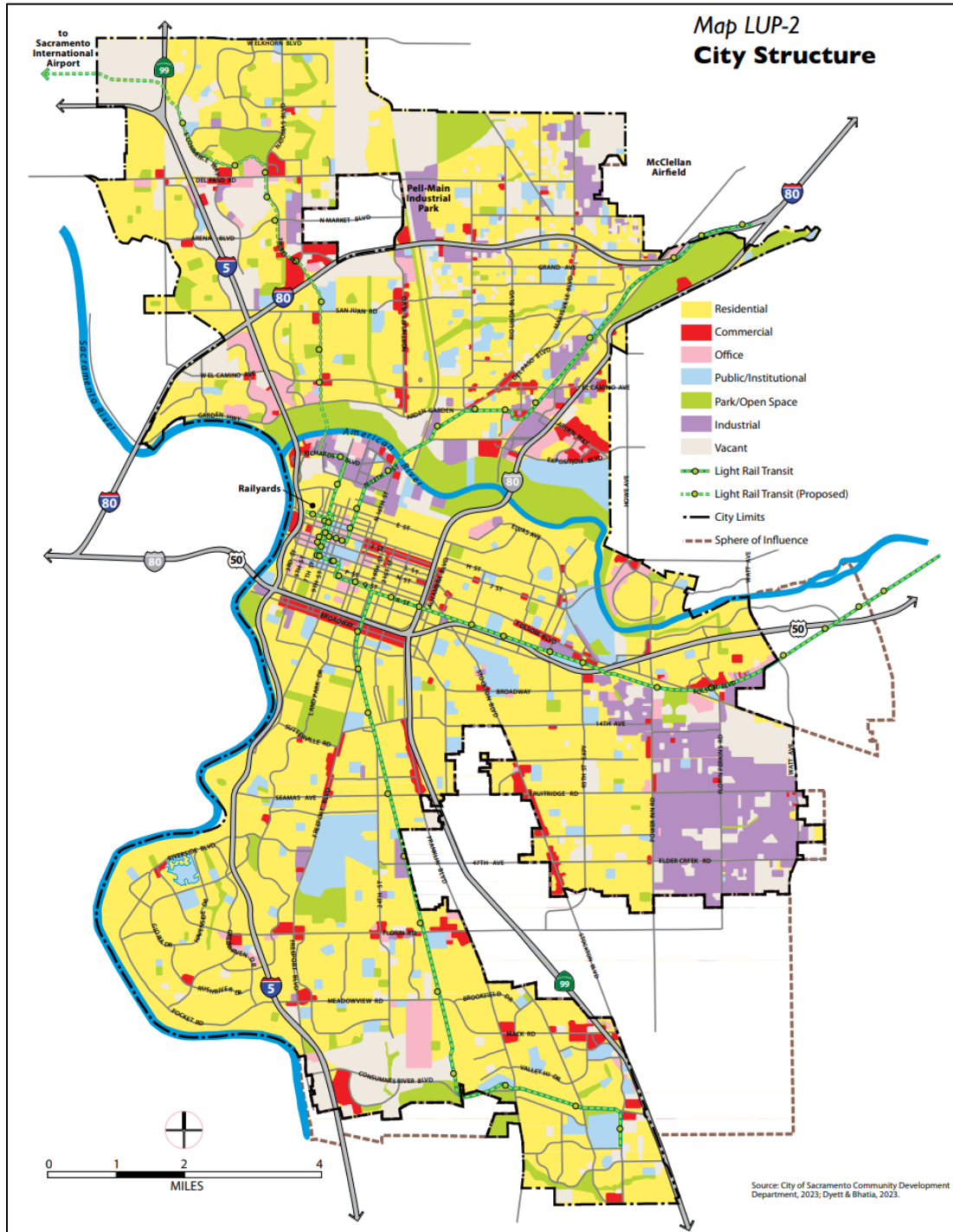


FIGURE 2-7: EXISTING LAND USE MAP (2040 GENERAL PLAN)

Projected Land Use Within the Retail Service Area

The City of Sacramento's land use planning framework is guided by its 2040 General Plan, which envisions a more connected, sustainable, and equitable urban form supported by efficient water and infrastructure systems. The City's Land Use Concept Map (**Figure 2-8**) illustrates how future growth is anticipated to occur within 59 defined Opportunity Areas that concentrate new development along major transportation corridors, near light rail stations, and within established employment centers.³⁷ Since then, two additional proposed developments have been identified.

The concept emphasizes infill and redevelopment within existing City limits rather than outward expansion, aligning with regional growth management and climate action goals. Central City remains the region's civic and economic core, supported by a network of mixed-use corridors such as Stockton Boulevard, Broadway, Florin Road, Franklin Boulevard, Arden Way, Del Paso Boulevard, Marysville Boulevard, Northgate Boulevard, Mack Road, and Truxel Road that will accommodate higher-density residential and commercial uses. Employment centers are distributed throughout the city, including office districts near the Sacramento International Airport and production/service areas in the Power Inn and Florin-Perkins industrial zones.

Neighborhood areas comprise most of the City's developed land and are expected to experience gradual reinvestment and small-scale infill. By focusing growth within existing infrastructure service areas, the Land Use Concept supports long-term water system sustainability, efficient use of existing facilities, and coordinated capital improvement planning consistent with the 2023 Water Master Plan.

³⁷ Opportunity Areas are referenced from the 2023 Water Master Plan Update and while related, do not necessarily simulate Opportunity Areas as identified in the City's 2040 General Plan.

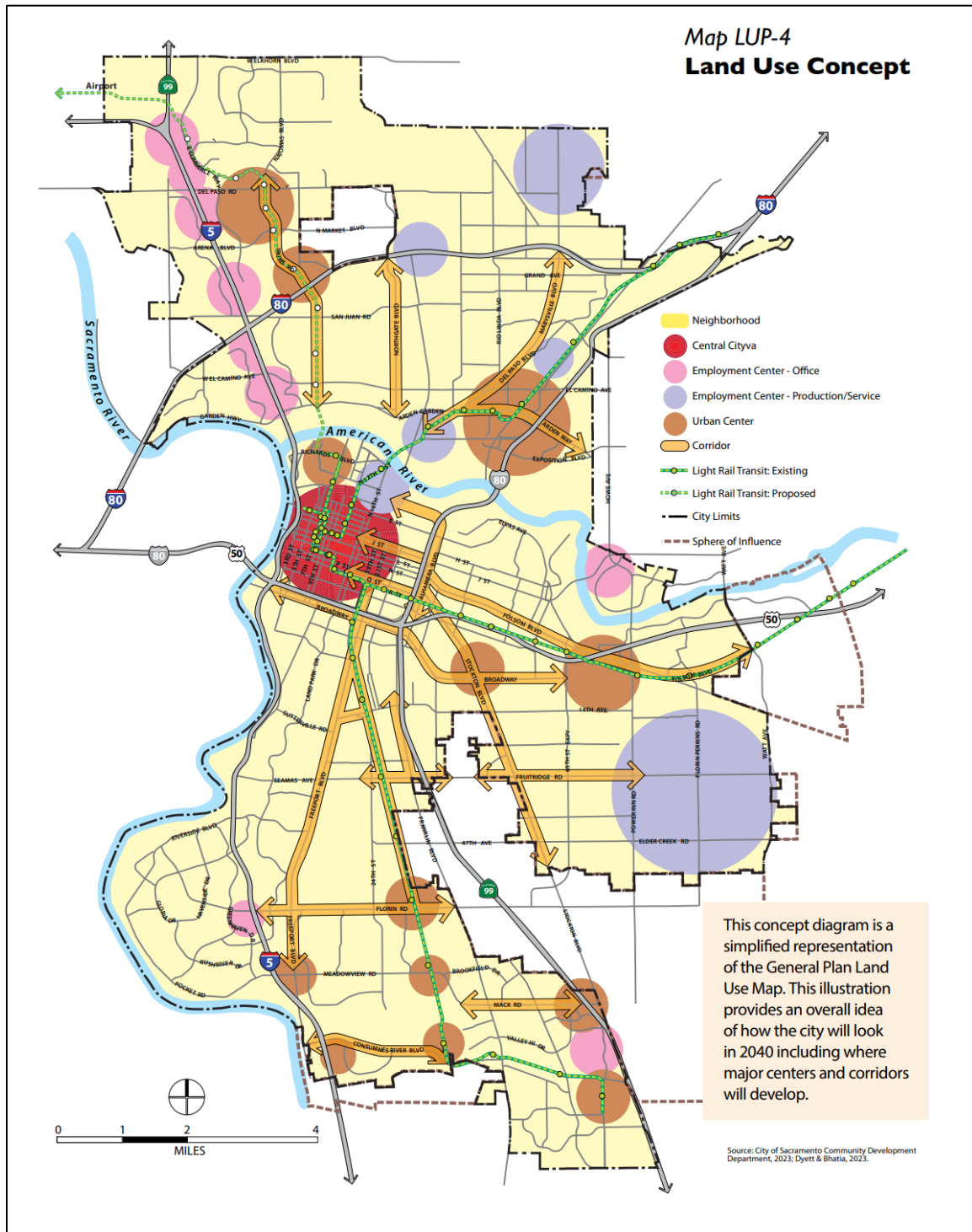


FIGURE 2-8: LAND USE CONCEPT MAP (2040 GENERAL PLAN)

Within each of these defined Opportunity Areas, a certain amount of growth and number of jobs are anticipated to be created. The 2023 Water Master Plan initially presented 59 of these Opportunity Areas, shown on **Table 2-6** and **Figure 2-9** (West Yost, 2023); as previously mentioned, two additional developments within the City limits have been proposed since then. Non-Opportunity Areas include anticipated growth throughout the City. A summary of new and previously presented developments anticipated within the City limits is shown on **Table 2-7**.

TABLE 2-6: SUMMARY OF LAND USE PLANS IN SERVICE AREA WITH FUTURE RESIDENTIAL UNITS

Opportunity Area ³⁸	Residential Units	
	Anticipated Growth	Percent Growth
47th	44	0
65th North	2,612	4
65th South	1,670	2
Arco Arena	1,918	3
Arden Fair	749	1
Arden/Del Paso	371	1
Broadway	866	1
Broadway East	143	0
C Street	200	0
Central Business District	7,271	11
Central City Corridors	5,399	8
City College	128	0
Cosumnes River	471	1
CSU-Sacramento Village	237	0
Del Paso	258	0
Delta Shores	5,222	8
Delta Shores Transit Center	370	1
Florin	1,124	2
Folsom East	579	1
Franklin	77	0
Freeport North	72	0
Freeport South	515	1
Fruitridge	30	0
Globe Light Rail Transit (LRT)	361	1
Granite Park	531	1
Greenbriar	2,766	4
Jackson	1,155	2
Johnston East	155	0
Johnston West	56	0
Kaiser Medical Center	0	0
Lemon Hill	517	1
Mack	215	0

³⁸ Opportunity Areas are referenced from the 2023 Water Master Plan Update and while related, do not necessarily simulate Opportunity Areas as identified in the City's 2040 General Plan.

Opportunity Area, continued ³⁹	Residential Units	
	Anticipated Growth	Percent Growth
Marconi	78	0
Marysville	184	0
McClellan Heights/Parker Homes	287	0
Meadowview	518	1
Methodist Medical Center	80	0
North City Farms	34	0
North Natomas Employment Center	1,758	3
North Northgate	535	1
Northgate	83	0
Panhandle	1,622	2
Point West	0	0
Power Inn/Army Depot	351	1
R Street Central City Housing	1,530	2
Raley	0	0
Richards Boulevard	3,352	5
Riverfront	5,443	8
Robla	576	1
Royal Oaks	259	0
Southwest Natomas	442	1
Stockton	888	1
Stockton North	452	1
Stockton South	217	0
Strawberry Manor	544	1
Swanston Station	64	0
Truxel	534	1
UC Davis Medical Center	254	0
Union Pacific Railyards	6,767	10
Opportunity Area Growth	62,935	92
Non-Opportunity Area Growth	5,470	8
Total Growth	68,405	100

³⁹ Opportunity Areas are referenced from the 2023 Water Master Plan Update and while related, do not necessarily simulate Opportunity Areas as identified in the City's 2040 General Plan.

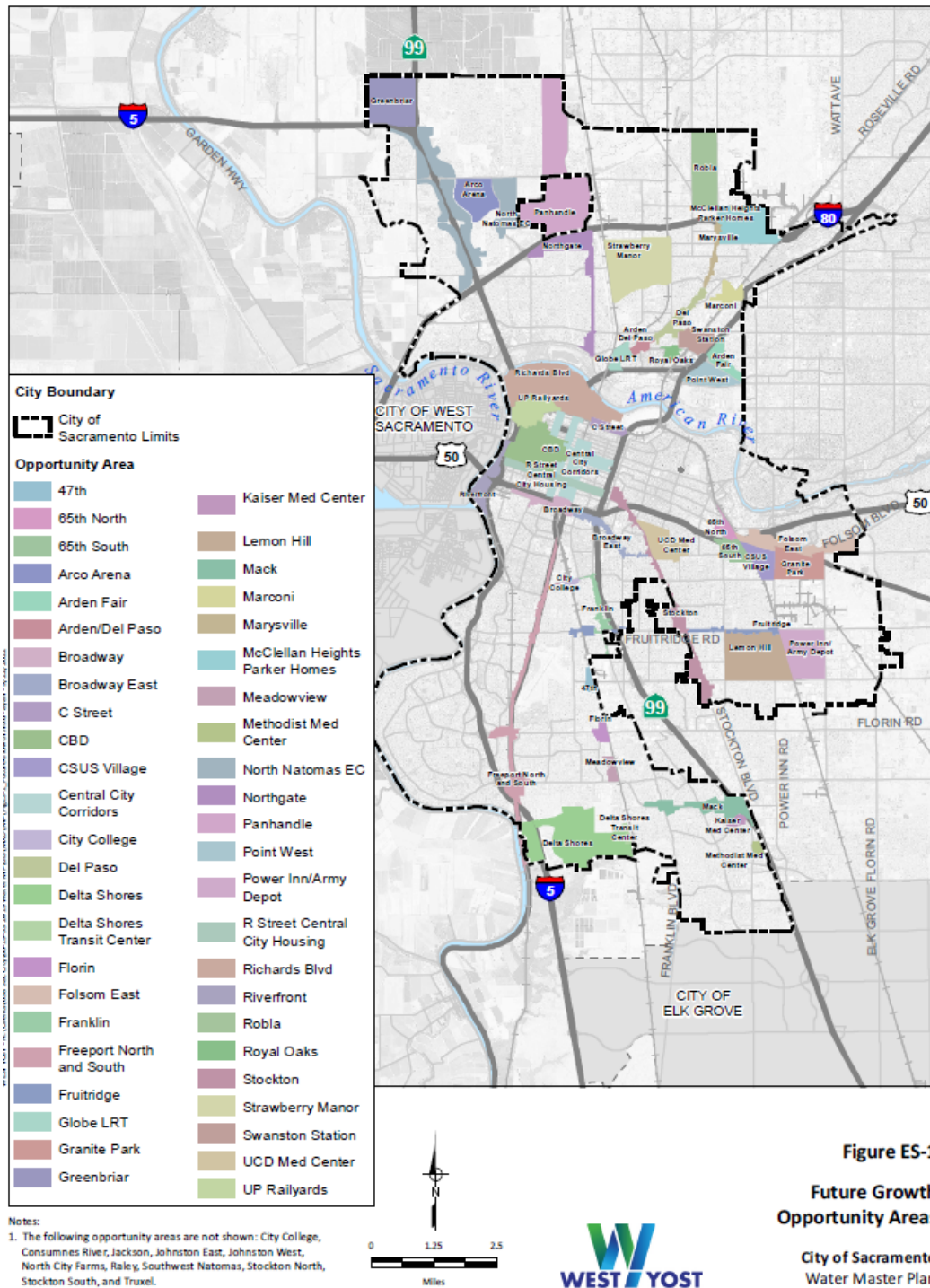


FIGURE 2-9: FUTURE GROWTH OPPORTUNITY AREAS FROM 2023 WATER MASTER PLAN (WEST YOST)⁴⁰

⁴⁰ City of Sacramento, *Water Master Plan Update* (2023), Figure ES-1.

Two developments located within the City’s Service Area, Stone Beetland and Aspen 1, were identified for inclusion since the preparation of the 2023 Water Master Plan Update. As shown on **Table 2-7**, Stone Beetland is the only development of the two planned to include future residential units, with the most recent planning documents indicating a combination of low, medium, and high-density residences totaling 1,163 new units. As of the preparation of this plan, correspondence with the City indicated that the Aspen 1 development is considered an industrial development, thus, will have no associated residential growth that could support an increase in population.

TABLE 2-7: SUMMARY OF OTHER LAND USE PLANS WITH FUTURE RESIDENTIAL UNITS

Opportunity Area ⁴¹	Anticipated Growth
	(Residential Units)
Stone Beetland	1,163
Aspen 1	-
Known Opportunity Area Growth (Updated from Table 2-6)	64,097
Non-Opportunity Area Growth (from Table 2-6)	5,470
Total Growth	69,567

Other opportunity areas located outside of the City’s existing service area were identified since the preparation of the 2023 Water Master Plan Update. Although growth associated with these anticipated developments may or may not play a part in the City’s future growth and projected land use, applicable land use elements for these developments were considered in the preparation of this plan should the City need to serve areas beyond their current Sphere of Influence (SOI), presented in **Table 2-8**. Importantly, these areas must be annexed into the City before the City can formally provide retail water service and/or environmental compliance support.

⁴¹ Opportunity Areas are referenced from the 2023 Water Master Plan Update and while related, do not necessarily simulate Opportunity Areas as identified in the City’s 2040 General Plan.

TABLE 2-8: SUMMARY OF OTHER LAND USE PLANS OUTSIDE OF THE CITY'S SERVICE AREA

Opportunity Area ⁴²	Anticipated Growth
	(Residential Units)
Airport South	-
Upper Westside	5,840
Grandpark Southwest	7,739
Grandpark Trails	15,546
W. Jackson Highway	14,460
Sacramento International Airport	-
Metro Airpark Development	-
Other Opportunity Area Growth	43,585
Total Currently Identified Growth (Including Known Opportunity Areas)	113,152

2.3.4. Economic Trends & Other Social and Demographic Factors

The City of Sacramento has experienced sustained population and economic growth, with the broader metropolitan area expanding steadily as people relocate for more affordable housing and job opportunities. Historically anchored by public sector jobs – primarily state and local government employment – the region's economy is increasingly diversifying into private sectors, including healthcare, biotechnology, and technology. Numerous hospitals, such as Sutter Health, Kaiser Permanente, and UC Davis Health maintain major healthcare networks across the region. Biotechnology, exemplified by projects like Aggie Square, are anticipated to support thousands of research and development jobs and sustain economic output upon completion. Moreover, professional services and technology-related positions, boosted by a larger, more educated workforce and proximity to Bay Area talent, continue to expand. A major tailwind propelling recent economic expansion is the migration of professionals seeking a more affordable cost-of-living, compared to coastal cities. The presence of leading institutions of higher education, including California State University Sacramento and UC Davis, also contribute significant economic impact and job creation in the region.

Between 2019 and 2023, the City ranked #2 in economic growth among large US cities, fueled by a 32% increase in median earnings, 166% surge in business applications, and 31% population increase. These advances in economic growth and productivity follow sustained

⁴² Opportunity Areas are referenced from the 2023 Water Master Plan Update and while related, do not necessarily simulate Opportunity Areas as identified in the City's 2040 General Plan.

declines in the unemployment rate. With unemployment rates in the Sacramento Metropolitan Area falling from a COVID-19 Pandemic high of 14.5% in April 2020 to 3.2% as recently as May 2022 (**Figure 2-10**). Despite diverse job creation, healthy unemployment, and a growing population, housing costs have continued to outpace wage growth, keeping affordability a central economic issue – especially for lower income residents.

A hallmark of the City remains its racial diversity, boasting one of the United States' highest diversity indexes. According to the 2020 US Census, the ethnic makeup of Sacramento is 37% White, 30% Hispanic/Latino, 20% Asian, 12% African American, and 1% other races or mixed race.

Sacramento's median household income is \$91,387.⁴³ A diverse job market, high educational attainment, and relatively affordable housing have generally contributed to increases in household income over the last decade. Demographically, younger age generations and immigrant communities contribute to Sacramento's dynamic social fabric, while internal migration – such as transplants from high cost-of-living locales – continue to influence the City's composition and economic vibrancy.

⁴³ 2024 American Community Survey 1-Year Estimates (S1901).
https://data.census.gov/profile/Sacramento_city,_California?g=160XX00US0664000

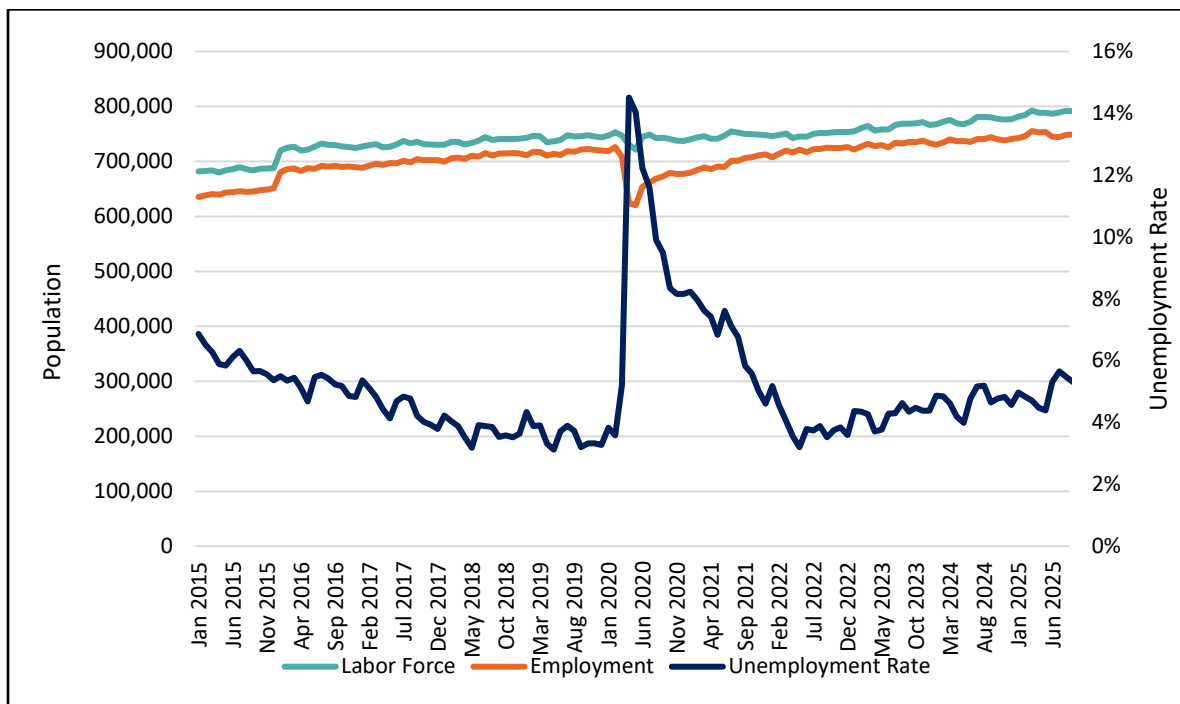


FIGURE 2-10: SACRAMENTO METROPOLITAN AREA EMPLOYMENT DATA⁴⁴

2.4. Delivery System Details

The City's water distribution system supports a diverse customer base through an integrated network of surface water and groundwater supplies. As of December 2025, the system served almost 147,000 service connections utilizing two surface water treatment facilities, one pressure zone, multiple groundwater wells, storage tanks, pumping stations, and an extensive system of transmission and distribution pipelines.

Currently, the City has wholesale agreements to supply American River water to various entities described in Section 2.1 and Chapter 4 through seven turnouts located along the boundaries of the City's retail service area. The same treatment, storage, and transmission infrastructure used to serve retail customers also supports these wholesale deliveries.

⁴⁴ Sacramento County Metropolitan Statistical Area Labor Force Data, Employment Development Department, January 23, 2026, (March 2024 Benchmark). <http://www.labormarketinfo.edd.ca.gov>

2.4.1. Potable Water System

In late 2021, the City completed its water metering program such that all of the City's water customers are now metered.

To support future development and maintain reliable service, the City continues to evaluate and implement system improvements across its distribution network. Considerations in the northeastern portion of the service area include a new ground-level storage reservoir proposed near Richardson Village Park and the potential creation of a new pressure zone to improve operational efficiency and service reliability. Preliminary analysis indicates that while no immediate storage deficiency exists, available non-well storage capacity in the Northeast region is minimal, approximately 3.0 million gallons (MG) during summer peak conditions, and the area could warrant additional capacity and flexibility. A detailed storage and energy optimization study will assess potential benefits of localized storage versus transmission capacity enhancements, including opportunities to leverage capacity in the Southeast region.

Surface water supplies from the Sacramento River are treated at the City's Sacramento River Water Treatment Plant (SRWTP), and surface water supplies from the American River are treated at the City's E.A. Fairbairn Water Treatment Plant (EAFWTP) and the SRWTP.

Sacramento River Water Treatment Plant

The Sacramento River Water Treatment Plant, located just east of Interstate 5 and south of Richards Boulevard, treats water pumped from the Sacramento River approximately one-half mile downstream of the American River confluence. The facility began operation in 1924 with an initial treatment capacity of 32 mgd. Prior to construction of the current SRWTP, historical records indicate that water was diverted directly from the Sacramento River near the intersection of Front Street and I Street, where the first documented pumps were installed in the late 1800s to supply the City. Since 1924, the City has completed a series of expansions and modifications that increased the diversion and treatment capacity of SRWTP to 160 mgd. The original point of diversion, constructed in the 1920s, supported the City's early Sacramento River supply operations. In 2006, the City completed a new intake structure approximately 700 feet downstream of the original intake to improve reliability and operational flexibility. The Water+ project includes construction of a second Sacramento River water intake with pump station, and conveyance line, along with improvements to the existing intake and associated facilities.

The SRWTP is permitted to operate at 160 mgd between May 15 and September 30 of each year and 120 mgd for the remainder of the year. Although the permitted summer capacity is 160 mgd, summer operations can be impacted by low river flow levels that potentially reduce

the capacity of the plant to 135 mgd in the summer months. Therefore, existing supply capacity is evaluated at 135 mgd for drier years and 160 mgd for normal years.

The City is currently evaluating expansion of the SRWTP under the Water+ program to increase diversion and treatment capacity up to 310 mgd. Final EIR certification was approved by City Council on April 14, 2026 for Water+ which would include construction of a new intake structure downstream of the American and Sacramento River confluence to accommodate the expanded capacity. The City has selected a phased approach consisting of one 75 mgd expansion and two separate 37.5-MGD increases to achieve the additional 150 mgd of capacity.

E.A. Fairbairn Water Treatment Plant

The E.A. Fairbairn Water Treatment Plant is located along the south bank of the lower American River, approximately seven miles upstream of its confluence with the Sacramento River. The facility was completed in 1964 and has undergone a series of upgrades and improvements since its original construction. The plant was designed for phased expansion to an ultimate treatment capacity of 404 mgd. Currently, the EAFWTP has a diversion capacity of 200 mgd and a permitted treatment capacity of 160 mgd, consisting of 80 mgd from Basins 1 and 2 and 80 mgd from Basins 3 and 4.

At present, however, only 80 mgd of treatment capacity is considered reliable. Flocculation and sedimentation basins 1 and 2, which account for 80 mgd of permitted capacity, are in poor condition and are not in service, and filters 1 through 8 also require rehabilitation. The City has a planned project to demolish basins 1 and 2 and reconstruct eight filters and one basin to increase the plant capacity to 120 mgd. The 120 mgd capacity would be available in normal and wet years outside of Hodge flow restrictions.⁴⁵ In drier years and conditions, when American River flows drop below the Hodge flow criteria, the EAFWTP would be restricted to 100 mgd. Therefore, existing capacity is evaluated at 80 mgd, with an increase in capacity by 2030 of 100 mgd in drier (Hodge) years and 120 mgd in normal (non-Hodge) and wet years. Additional limitations on diversion rates are discussed in context with American River water rights in Chapter 3.

⁴⁵ Judge Richard A. Hodge issued a judgement known as the 'Hodge Decision' in 1990 as a result of litigation stemming from a dispute of potential diversions on the American River by East Bay Municipal Utility District (EBMUD). This "Physical Solution", or legal criteria is based on flows in the lower American River and intends to resolve the conflict between flows reserved in the American River for instream resources and consumptive beneficial uses. The associated flow criteria implemented by the Hodge Decision are known as "Hodge Flows".

Storage Tanks

The City operates seventeen storage facilities, consisting of twelve distribution system reservoirs located throughout the service area and five finished water clearwells located at the treatment plants, including two at the EAFWTP and three at the SRWTP. The total storage capacity of the twelve distribution reservoirs is approximately 49 million gallons (MG). The five clearwells at the treatment plants provide a combined storage capacity of approximately 45 MG.

The locations of the twelve distribution reservoirs and the two water treatment plants are shown on **Figure 2-11**.

Distribution and Transmission Pipelines

The City maintains approximately 1,800 miles of transmission and distribution pipelines ranging in diameter from 2 to 72 inches, as shown in **Figure 2-11**. Of this total, about 415 miles consist of pipelines 12 inches in diameter or larger, while roughly 70 percent of the system is comprised of six- and eight-inch diameter mains. In addition, the City collaborated with Sac Sewer and the SPA on the development of a dedicated recycled water pipeline that conveys recycled water from the EchoWater Resource Recovery Facility to the SPA Cogen Facility.

Pumping Facilities

The City currently operates eighteen high-lift service pumps at the SRWTP and EAFWTP and may install up to two additional high service pumps at the EAFWTP. Each distribution storage reservoir is equipped with a pump station to deliver water to customers as system demands fluctuate throughout the day. In addition, the City operates a separate booster pump station that serves a small area in the northeastern portion of the service area.

Pressure Zones

The City's distribution system operates with one pressure zone. The pressure zone is supplied directly by high service pumps at each of the water treatment plants and from the groundwater wells, while pressure is supported by the systems storage reservoirs. The City prefers to maintain a minimum pressure of 30 psi throughout the system.

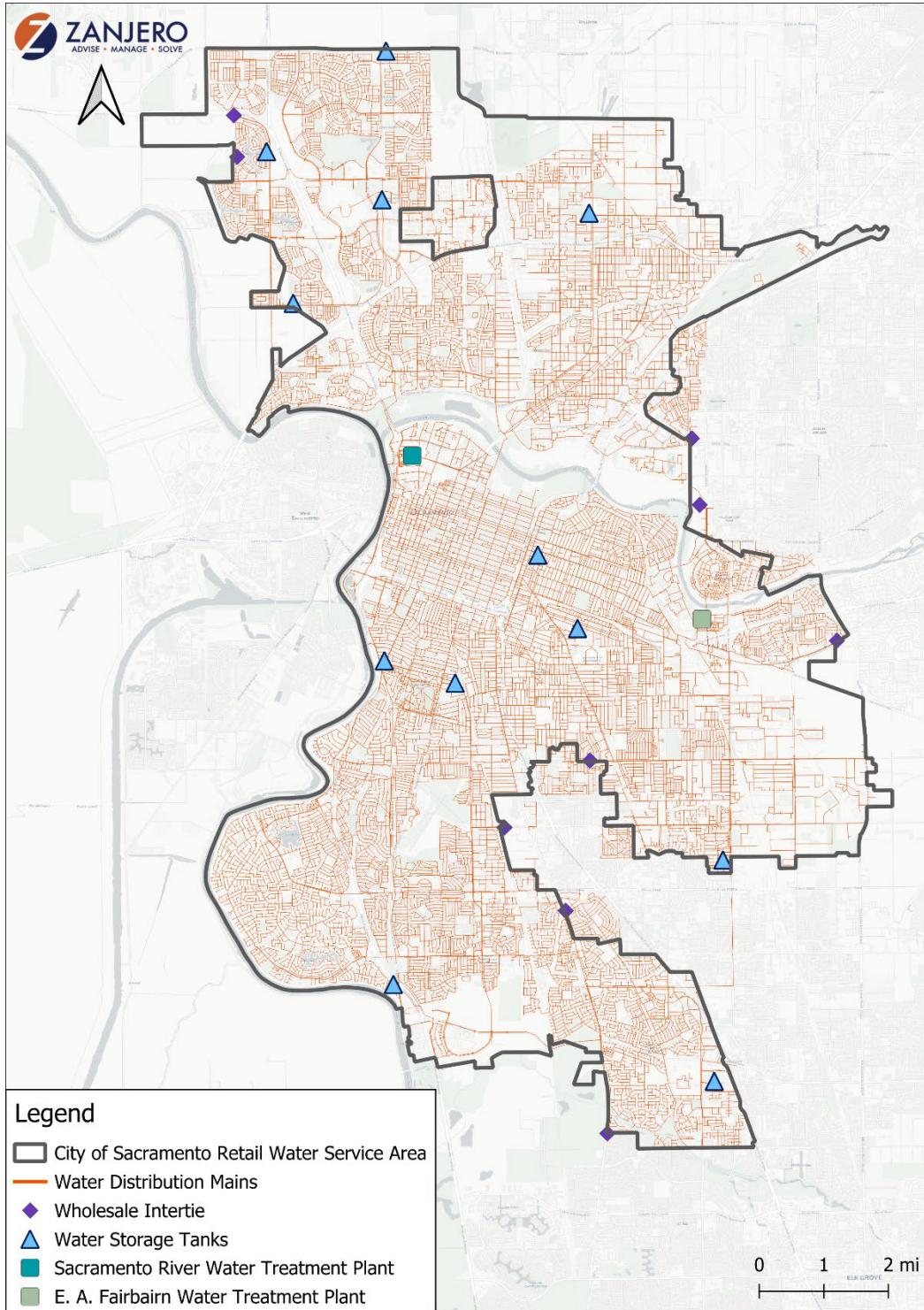


FIGURE 2-11: POTABLE WATER SYSTEM

2.4.2. Groundwater Supply System

In 2025, the City was operating 22 permitted potable supply wells that could produce about 20 to 22 mgd from deep, hydraulically connected alluvial aquifers underlying two subbasins of the Sacramento Valley Groundwater Basin. In addition to providing high quality water that requires only minimal treatment beyond disinfection, these wells help maintain system pressures in the northeast and southeast service areas and provide emergency supply that can reduce the need for additional storage tanks.

Since 2020, the City has advanced its Well Replacement Program, analyzed in the 2023 Draft Environmental Impact Report, to systematically replace aging wells, improve treatment reliability, and sustain long term production capacity. As shown on **Figure 2-12**, the program aims to modernize aging wells, in both the North American Subbasin and the South American Subbasin, further enhancing system reliability and potentially expanding operational capacity. The Groundwater Master Plan Well Replacement Program recommends continued rehabilitation or replacement of wells at the end of their useful life to maintain at least 22 mgd of reliable groundwater production.

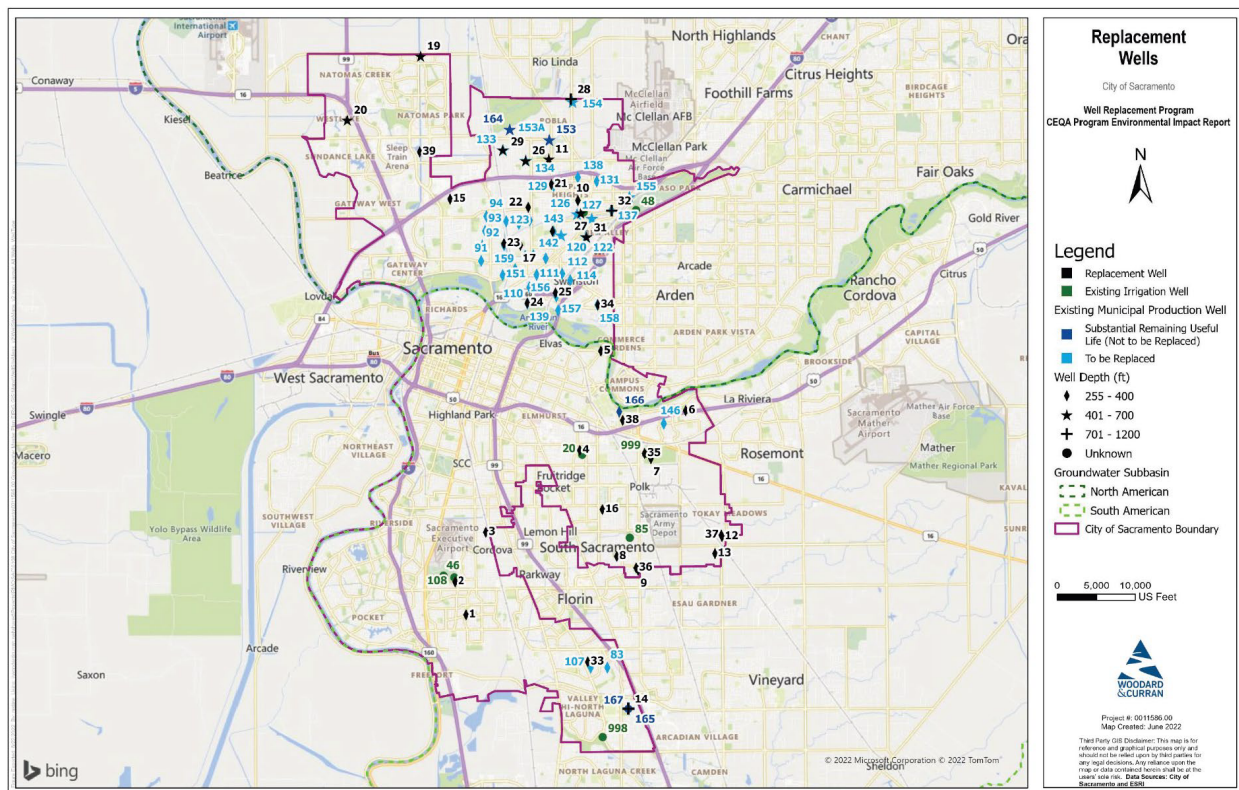


FIGURE 2-12: POTENTIAL REPLACEMENT WELL LOCATIONS(WOODARD CURREN)

The number of active, inactive, or out of service wells may change over time due to ongoing operations, rehabilitation, and construction activities. The City well inventory also includes irrigation and park supply wells that are within City limits but are not connected to the City's potable water system. Well locations, not including irrigation/park supply wells are shown on **Figure 2-13** on the following page, and groundwater supply is discussed in more detail in Chapter 3.

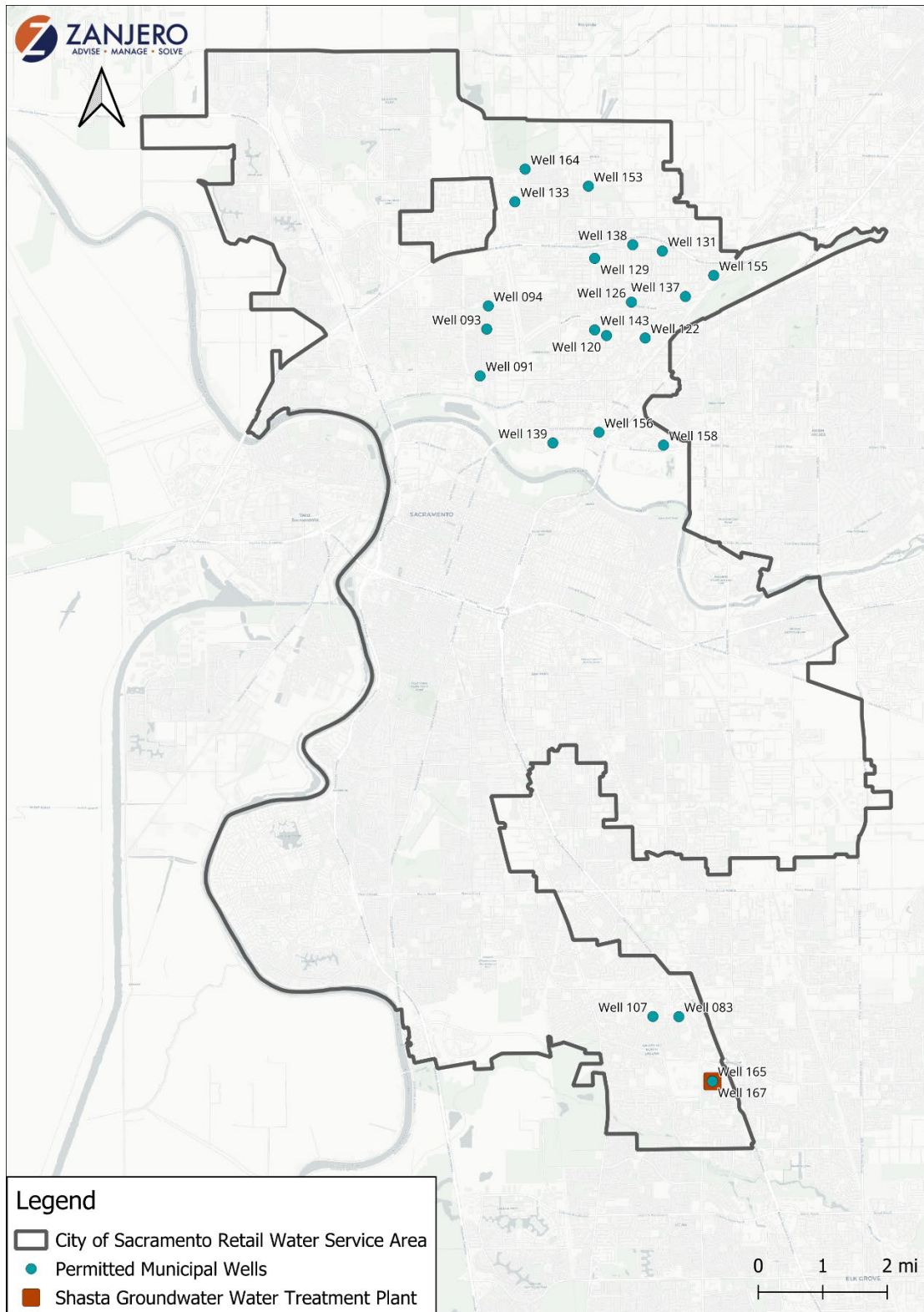


FIGURE 2-13: GROUNDWATER WELL MAP (AS OF DECEMBER 2025)

2.4.3. Non-Potable Water System

Recycled water is defined as treated municipal wastewater discharged from a wastewater treatment plant that is suitable for beneficial reuse. The City engages in regional collaboration with Sac Sewer, SCWA, and Sacramento Municipal Utility District (SMUD) to provide a small amount of recycled water to the SPA Cogen Facility, located outside of the City limits.

As an alternative to constructing their own cost-prohibitive recycled water system, the City partnered with SacSewer and SPA to construct a recycled water pipeline, currently delivering approximately 1 mgd of water from the EchoWater Facility to the SPA Cogen Facility. This wholesale recycled water is not distributed or additionally treated. This pipeline is sized to convey a maximum of 4.6 mgd to serve additional future users within the City with recycled water for landscaped irrigation, although this expansion may not occur until after the 2050 planning horizon. The existing volumes of recycled water conveyed to Cogen are presented in **Table 3-20** in Chapter 3.

2.4.4. Wholesale Interconnections

As discussed previously in this Chapter, the City of Sacramento is a cornerstone of regional water supply management. In addition to its own retail service, the City provides wholesale water service to three neighboring agencies – SCWA, SSWD, and CalAm – as well as Natomas Unified School District. The City's water system is part of a complex and collaborative regional network designed to ensure a reliable and resilient water supply. This network relies on a series of City interconnections with neighboring water agencies to facilitate the transfer and exchange of surplus water supplies, a strategy that has proven particularly beneficial during droughts and for conjunctive management. Moreover, wholesale agreements underscore the City's role as not just a local provider, but as a regional provider capable of leveraging surplus water and delivery infrastructure to the benefit of its neighbors.

Sacramento County Water Agency – operates two interconnections with the City. One connection is located near Franklin Boulevard at the southern boundary of the City and the second is located in Bayou Road at the western edge of the City. These interconnections respectively serve the Zone 40 service area; and the Sacramento International Airport and Zone 50 Metro Air Park.

Sacramento Suburban Water District – receives a variable amount of wholesale water from the City for its South Service Area (located in the American River POU) since 2007. The City operates seven interties with SSWD. One intertie is used to convey the aforementioned water and is located near Howe Avenue and Northrop Drive, the remaining six interties are for emergency use only.

California American Water Company – CalAm uses a combination of groundwater and wholesale water purchases to supply water to three service areas. The City maintains five active interconnections serving Cal-Am as described in Section 2.2.3. Additionally, there are five emergency interties to Cal-Am Fruitridge Vista area, three emergency interties south of the Cal-Am Fruitridge Vista area, and one emergency intertie shared with the Sac Suburban Water District in the Arden Service Area.

Natomas Unified School District – a relatively small wholesale agreement to serve the Paso Verde K-8 School, located outside but adjacent to the City limits.

In essence, Sacramento's water supply is not a standalone system but a vital part of a broader, interconnected network that leverages shared infrastructure and collaborative agreements to ensure a resilient and reliable water future for the entire region.

2.4.5. New Infrastructure and Resiliency

Along with planned capital improvement projects and system maintenance and upgrades, the City is participating in reliability projects both local and in the greater Sacramento region.

Water+ Project

The City of Sacramento is moving forward with the Water+ project to improve the resiliency of the existing SRWTP and EAFWTP facilities, as well as increase water treatment capacity to meet future municipal and wholesale water demands while exercising and protecting the City's existing surface water rights. The project will be implemented in phases and includes improvements to both of the City's surface water treatment plants and related infrastructure.

The Sacramento River Water Treatment Plant will be expanded in phases to increase treatment capacity. Phase I will increase capacity by 75 MGD, and future phases to buildout will provide an additional 75 MGD increase for a total of 150 MGD over current treatment capacity. The expansion includes a new intake structure in the Sacramento River, conveyance pipelines, and supporting infrastructure improvements. The Fairbairn Water Treatment Plant will also receive treatment process improvements as part of the project.

All increased diversions associated with the Water+ project will operate under the City's existing water rights framework and the 1957 permanent water rights contract with the

Bureau of Reclamation, which includes total diversions of 326,800 AFY by 2030. The project is designed to comply with the Water Forum Agreement, American River flow requirements, and applicable regulatory standards.

The Water+ project EIR was certified by City Council on April 14, 2026. The phased implementation approach will allow the City to incrementally increase surface water treatment capacity and enhance supply reliability to meet the region's long-term water needs.

RiverArc

The City of Sacramento is participating in the RiverArc Project, a regional partnership with Placer County Water Agency (PCWA) and City of Roseville to enhance water supply reliability and support environmental objectives for the lower American River. The project will create flexible diversion providing a new diversion point on the Sacramento River, improving supply diversification and reducing pressure on the American River, which is designated as a Wild and Scenic River.

RiverArc will utilize an existing intake on the Sacramento River and convey water through a new raw water pipeline to a new regional water treatment plant. Treated water will be distributed to partner agencies through new and existing transmission pipelines. The project is designed to be implemented in phases, with initial construction planned for the 2030s.

The project addresses the region's heavy reliance on the American River watershed, which currently provides approximately 80% of surface water supplies despite the Sacramento River being significantly larger. By diversifying supply diversion points, RiverArc will provide operational flexibility during periods when American River diversions are restricted, support conjunctive use of surface and groundwater supplies, and preserve environmental flows in the lower American River.

RiverArc is a key component of the Water Forum Agreement and received a \$5.1 million grant from the Wildlife Conservation Board in 2023 to advance environmental review and planning work. The project is currently in the environmental review process and is anticipated to provide increased water supply reliability and enhanced ecosystem protection for the Sacramento region.

Groundwater Master Plan Well Replacement Program

The City's Groundwater Master Plan Well Replacement Program involves replacing up to 38 municipal production wells that are at or near the end of their useful life over a 15-year implementation period. The program responds to aging infrastructure challenges, groundwater quality concerns, and the need to maintain reliable groundwater extraction capacity as climate change increases the frequency and intensity of dry years.

Many existing well locations are too small to accommodate same-site replacement, and water quality issues affect the viability of other current wells. The replacement program addresses these constraints by identifying new well sites throughout the City's service area, distributed across both the North American Subbasin and South American Subbasin.

The program supports conjunctive use water management, allowing the City to strategically utilize groundwater during surface water supply constraints while promoting long-term sustainability of both water sources. Wells requiring additional treatment for constituents such as manganese will include on-site treatment systems with filters, storage tanks, and aeration equipment.

The program underwent comprehensive environmental review through a Draft EIR completed in April 2023, with implementation planned to extend through 2040 to align with the City's water demand projections and ensure continued water supply reliability.

Sacramento Regional Water Bank

The City of Sacramento is a participant in the Sacramento Regional Water Bank, a water reliability and storage program that leverages the “reservoir under our feet” to offset the effects of climate change on the region's water system. This project is led by the Regional Water Authority, representing over two dozen water providers, including the City, in the development of this program.

The SRWB will enable the City and participating regional members to deposit and withdraw water during wet and during dry periods, holding twice the capacity of the Folsom Reservoir and offsetting the impact of climate change on the region's water system due to the loss of snowpack, hydrologic variability, and environmental and regulatory conditions.⁴⁶ The SRWB formalizes conjunctive use programs that have been banking water over the past three decades and documented in Sacramento Groundwater Authority's Water Accounting Framework. RWA updated this framework into a formalized Water Accounting System to transparently manage and monitor water banking activities within the North and South American Subbasins. The SRWB is discussed in more detail in Chapter 3.

Planned System Improvements

The capacity of the existing and planned infrastructure is a key consideration for the City's ability to support future retail and wholesale demands. The 2023 Water Master Plan provided a sensitivity analysis of the City's future water distribution system, including an evaluation of the water supply, storage, and pumping capacity needed to support future water demands

⁴⁶ Regional Water Authority, Sacramento Regional Water Bank, <https://sacwaterbank.com/>

while meeting various performance standards and operational criteria. Evaluation scenarios reflected:

- Existing, future, and alternative supply sources
- Additional growth within the City's service area
- Potential development areas outside of City limits that might be considered for City service in the future
- 2030, 2040, and 2050 planning horizons
- Future water deliveries to potential wholesale customers
- Progress on planned improvements and/or expansions and participation in reliability projects.

The results from the storage evaluation found that additional storage may be needed to sufficiently support future retail growth. Furthermore, additional storage supports sustainable treatment processes and can absorb concentrated water demands associated with the City's irrigation schedule. Additional storage also supports the ability to take tanks offline for required or preventative maintenance. Future system reliability projects could reduce the amount of emergency storage needed by improving overall system reliability. For example, participation in projects such as RiverArc is recommended to improve the City's water portfolio, along with continued investment in groundwater wells and the City's water treatment plants. The City's pumping system was found to have sufficient capacity to support projected retail and wholesale demands through 2040, but that new storage facilities would require new associated pumping facilities to meet projected demands through 2050.⁴⁷

As part of the hydraulic evaluations, the 2023 Water Master Plan recommended that the City improve existing pipeline capacity and managing distribution system pressures by continuing and/or expanding their annual rehabilitation and replacement efforts for existing groundwater wells and pipelines, respectively. Additionally, the plan recommended installing several new transmission pipelines to facilitate future retail and wholesale deliveries and meet performance criteria within and beyond 2040. For more information, see Chapter 7 of the City's 2023 Water Master Plan Update.

Although an extensive technical and capacity analysis has not yet been completed for future retail and wholesale demands beyond the 2050 planning horizon, the City anticipates that

⁴⁷ 2023 Water Master Plan Update (West Yost). Section 7.7.3 – Pumping Capacity Evaluation, pp. 7-12 to 7-14.

future conjunctive use, water storage, and pumping improvement projects will sufficiently expand system capacity. When appropriate, an updated sensitivity analysis will be completed to evaluate what improvements are needed for existing and new infrastructure to supply water to meet long-term future demands. Long-range demands are discussed in Chapter 4.

2.5. Energy Intensity

California Water Code Section 10631.2(a) codified the requirement that urban suppliers must include information it can readily obtain related to the amount of energy consumed to divert, extract, produce, treat, and deliver water, referred to as “Energy Intensity Reporting” for urban water suppliers. *Energy Intensity* is defined as: the total amount of energy expended in kilowatt-hours (kWh) by the urban water supplier on a per acre-foot basis to convey water from the location where the urban water supplier acquires the water to its point of delivery (i.e., turnout).

Due to the manner in which water is supplied within the City’s various service areas, it is not currently possible to parse out energy use for extraction, treatment, storage, and distribution. This limitation is due to the delivery and treatment facilities operating on shared power meters, and the use of solar at some of the City’s facilities. As a result, the City employs a Total Utility Approach, which sums the annual net energy consumed for all water management processes, divided by total volume of water (in acre-feet).⁴⁸ These processes include diversion, conveyance, placement into storage, treatment, and distribution. The total energy intensity is reported in **Table 2-9**.

TABLE 2-9: ENERGY INTENSITY – TOTAL UTILITY APPROACH - 2025

Sum of All Water Management Processes	
Volume of Water Entering Process (acre-feet)	82,845
Energy Consumed (kWh)	34,963,798
Energy Intensity (kWh/acre-foot)	422

⁴⁸ Net energy is used due to solar production not being tracked separate from consumption.

Chapter 3

Water Supply

The City of Sacramento operates one of the oldest public municipal water systems in California, currently serving water to a population of over 527,000 residents, with close to 147,000 customer service connections over a retail service area of about 101 square miles. The City is actively committed to regional environmental stewardship and public trust resources while continuing to build facilities and being actively involved in regional resiliency initiatives to provide safe and reliable water supplies to the public. Moreover, these key items buttress the City's Climate Adaptation and Watershed Resilience platform – the platform guiding the City's future water supply management.

The City's water supply portfolio draws from multiple watersheds and groundwater basins. Surface water entitlements include a Sacramento River pre-1914 right and post-1914 appropriative permits on both the Sacramento River and American River systems. The American River supply originates from two distinct watershed sources: the South Fork American River watershed, and the Middle Fork American River watershed. Both sources flow to City municipal diversion points through the United States Bureau of Reclamation's Folsom Reservoir and Lake Natoma on the Lower American River. The E.A. Fairbairn Water Treatment Plant is the City's diversion point on the American River.

About a mile downstream from the confluence of the American and Sacramento Rivers is the City's Sacramento River Water Treatment Plant intake structure. The City has six appropriative surface water rights with varying priority dates, diversion rates, and seasonal limitations. The pre-1914 appropriative right on the Sacramento River, dating to 1849, provides the most senior priority date with year-round diversion capability of 75 cubic feet per second. Permit 992, originally filed in 1920, allows an additional 225 cfs of Sacramento River diversion capacity. On the American River system, four permits (11358, 11359, 11360, and 11361) provide substantial volume but with some seasonal and regulatory limitations. The availability and operational characteristics of these surface water assets are shaped by contractual agreements and regulatory overlays including provisions in the 1957 Operating Contract with the United States Bureau of Reclamation (USBR)⁴⁹, and the City's voluntary Water Forum Agreement commitments, pending regional approval.

⁴⁹ USBR Operating Contract No. 14-06-200-6497

Both river systems are subject to regulatory actions, stored water operations, and operational decisions made at upstream facilities that are outside the City's direct control. Sacramento Municipal Utility District's (SMUD) Upper American River Project (UARP), Folsom Dam operations, USBR water releases, State Water Board curtailment orders, Bay-Delta Plan flow requirements, and other flow constraints can independently or collectively affect the availability of surface water supply from any given watershed in a given year.

The City's surface water supply system is complemented by strategically managed groundwater assets that enhance operational flexibility and drought resilience. Groundwater resources from the North American and South American subbasins provide the City with critical operational flexibility, particularly during dry-year conditions. The City leverages permitted wells as part of their conjunctive use strategy to provide additional supply when surface water diversions are faced with regulatory or hydrologic constraints. However, not all wells are active at all times, as they may be shut down for conjunctive use operation, or they may be limited by factors such as maintenance needs, water quality constraints, permitting requirements, or facility upgrades. The City's ongoing Well Replacement Program aims to replace the City's aging wells, further enhancing system reliability and operational capacity. The City's groundwater supplies and management are discussed in Section 3.3.

Chapter 3 provides detailed analysis of each component of Sacramento's water supply portfolio, describing the characteristics and management of each supply along with anticipated availability under normal, single dry year and multi-year drought conditions. Discussion is also provided about the anticipated supply availability through 2050 and beyond. For clarity, surface water assets are grouped by source river system—American River and Sacramento River. The chapter coordinates closely with the supply assessments and demand projections detailed in Chapter 4 to provide a thorough, integrated view of how Sacramento's diverse water assets can meet current and future needs amid changing conditions.

3.1. Water Supply Sources

The City of Sacramento's water supply reliability depends on a strategically diversified portfolio of surface water rights and groundwater assets that have been developed and refined over more than 150 years of municipal water management. Surface water rights form the foundation of the City's supply system, supported by groundwater resources that provide critical operational flexibility and drought resilience. The City anticipates continuing its water stewardship and water asset management into the next millennium. The following sections provide a detailed examination of each component of the City's water asset portfolio.

3.2. Surface Water

The City of Sacramento relies on two primary surface water sources: the Sacramento and American River watersheds. The Sacramento River drains more than 27,000 square miles, producing roughly 70% of California’s total water supply,⁵⁰ and flows 384 miles from its headwaters near Mount Shasta to the San Francisco Bay. Major tributaries include the Pit, Feather, and American Rivers. Flow in the Sacramento River is heavily regulated by the federal Central Valley Project (CVP) and the California State Water Project (SWP), with Shasta and Oroville Dams controlling releases that directly affect the City’s diversion reliability and water quality.

The American River watershed encompasses about 2,150 square miles and originates in the Sierra Nevada mountains before joining the Sacramento River near downtown Sacramento. The river’s three main forks—North, Middle, and South—flow westward and converge in Folsom Lake, which is operated by the USBR as part of the CVP. Below Folsom Dam, the Lower American River, designated as a federal and state Wild and Scenic River, travels roughly 23 miles to its confluence with the Sacramento River. The watershed’s network of reservoirs and hydroelectric facilities, operated by agencies such as the USBR, SMUD, Placer County Water Agency, and others, helps regulate flows that support the City’s municipal water supply, provide hydropower, and sustain important habitat and recreational uses.

The place of use of the City’s water rights is shown in Chapter 2 at **Figure 2-1**. The City’s surface water asset characteristics are shown below in **Table 3-1**. It should be noted that the City manages its water rights diversions according to the terms of the USBR Operating Contract discussed in Section 3.2.1 and **Table 3-2**.

⁵⁰ US Army Corps of Engineers, 1978.

TABLE 3-1: CITY OF SACRAMENTO'S SURFACE WATER RIGHTS

Source	Water Asset	Face Value Annual Amount and Maximum Rate of Diversion	Season of Use
Sacramento River	Pre-1914	75 cfs	Year-round
	Permit 992	81,800 AF 225 cfs	Year-round
American River	Permit 11358	271,740 AF 500 cfs	Direct Diversion: 11/1 – 8/1
	Permit 11359	443,479 AF 310 cfs	Direct Diversion: 11/1 – 8/1
			Re-diversion: 1/1 – 12/31
	Permit 11360	966,175 AF 1,200 cfs	Direct Diversion: 11/1 – 8/1
			Re-diversion: 1/1 – 12/31
	Permit 11361	95,109 AF 175 cfs	Direct Diversion: 11/1 – 8/1

AF = Acre-Feet; cfs = cubic feet per second

Camp Sacramento Water Rights

The City also holds two small water rights on Sayles Creek, a tributary of the South Fork American River, dedicated exclusively to supporting operations at Camp Sacramento in El Dorado National Forest. The first is a riparian right with a 1920 priority date (S025297), authorizing diversion from Sayles Creek into a 9,100-gallon off-stream storage tank for domestic use during the May through September season. The second is License 1070, a State Board-issued appropriative right, allowing diversion of up to 7,200 gallons per day (approximately 0.011 cfs) from June 15 to September 15. The water rights are geographically restricted to the 14-acre Camp Sacramento property and therefore are not a part of the City's UWMP. Nevertheless, the City will maintain continued beneficial use of these rights for their intended purposes and will fulfill ongoing State Board reporting requirements.

3.2.2. USBR Operating Contract

The 1957 USBR Operating Contract (Operating Contract) serves as a cornerstone agreement between the City of Sacramento and the United States Bureau of Reclamation.⁵¹ The two parties entered into the Operating Contract to settle ongoing disputes regarding water rights permits and the construction and operation of Folsom and Nimbus Dams and Reservoirs as well as Shasta Dam and Reservoir. The Operating Contract establishes limits on the volume and rates of City diversions in exchange for USBR's commitment to operate its facilities to

⁵¹ The full name of the Operating Contract No. 14-06-200-6497 is: "Operating Contract Relating to Folsom and Nimbus Dams and Their Related Works and to Diversions of Water by the City of Sacramento".

ensure the City has a permanent and reliable water supply derived from its surface water permits. Accordingly, the Operating Contract ensures delivery of the City's water supplies, recognizes the City's water rights permits, and provides for delivery from USBR storage operations. The City agreed to pay USBR annually for Folsom Reservoir storage capacity used to satisfy USBR's contractual obligations for delivery. Storage payments began at 8,000 AF of capacity in 1963 and escalated over time reaching 90,000 AF of storage capacity by 2030.

The Operating Contract obligates USBR to maintain sufficient flows in the rivers at all times to support diversions under the City's water rights. The contract provides for the USBR to, "...impound and store water in the reservoirs back of Folsom and Nimbus Dams...", and deliver up to 245,000 AFY from the American River and to operate Shasta Dam to ensure the City can divert its full entitlement of 81,800 AFY from Permit 992 from the Sacramento River.⁵² Maximum combined diversion volumes are limited as shown in **Table 3-2** below. The City may divert up to 81,800 AFY from the Sacramento River as long as total diversions between two rivers do not exceed the values in the total combined column. Additionally, the Operating Contract limits diversions to 225 cfs from the Sacramento River under Permit 992, and 675 cfs combined between the four American River permits. The Operating Contract is a permanent agreement and provides the City with an exceptionally reliable and secure water supply in all year types.⁵³

TABLE 3-2: USBR OPERATING CONTRACT DIVERSION SCHEDULE AND MAXIMUM CONTRACT DIVERSIONS⁵⁴

Year	Sacramento River	American River	Total Combined
2015	81,800	189,000	252,000
2020	81,800	208,500	278,000
2025	81,800	228,000	304,000
2030	81,800	245,000	326,800
2035	81,800	245,000	326,800
2040	81,800	245,000	326,800
2045	81,800	245,000	326,800
2050	81,800	245,000	326,800

⁵² Operating Contract, Article 9 at p. 6.

⁵³ The water rights and Operating Contract descriptions in this chapter are for informational purposes only and are not intended to modify, interpret, or affect City or USBR underlying rights or contractual obligations.

⁵⁴ USBR Operating Contract No. 14-06-200-6497, Diversion Schedule by City of Sacramento, Schedule "A" and Schedule "B" at pp. 54-55.

3.2.3. Sacramento River Surface Water Assets

The City holds a pre-1914 appropriative water right (S014834) authorizing year-round diversion from the Sacramento River for municipal and industrial purposes. With a priority date of 1849, this represents the City's most senior water right. The diversion point is currently at the Sacramento River Water Treatment Plant (SRWTP), though historical diversions occurred near the intersection of Front Street and I Street.

The City also holds a single post-1914 Sacramento River permit, Permit 992 (Application 1743), with a priority date of March 30, 1920. This permit authorizes a year-round direct diversion of 225 cfs from the Sacramento River. There are two authorized points of diversion for Permit 992. The diversion point for municipal use is at the SRWTP, though the original intake facility, constructed in the 1920s, still exists several hundred feet north of the SRWTP. The second POD for Permit 992 is the inlet at Pioneer Reservoir.

Pre-1914 Claim

The City's pre-1914 water right on the Sacramento River of 75 cubic feet per second (cfs) is a foundational component of the City's water supply portfolio. This water right derives from original water diversions beginning in 1849 when William P. Henry established a suction pump on the Sacramento River. The City's established the first publicly owned water supply system in the State of California in 1854, following citizen approval of a direct tax in 1853 to finance a public water supply system in response to the devastating fire of November 1852. The right carries a priority date from the initial diversion date and is currently diverted at the SRWTP to serve the growing population of the City of Sacramento.

Pre-1914 Future Availability and Long-Term Reliability

The City's pre-1914 water right is considered reliable in all but extreme dry-years and curtailment scenarios because of its senior priority date. **Table 3-3** shows a long-term average availability along with projected reliability.

TABLE 3-3: PRE-1914 ESTIMATED AVAILABILITY FROM 2026-2030 (CFS)

Year Type		Supply Available
Normal		75
Single Dry-Year		75
Multi-Year Drought	2026	75
	2027	75
	2028	75
	2029	75
	2030	75

The State Board has issued curtailment orders for pre-1914 water rights in extreme drought conditions, most recently during 2021 and 2022. However, these curtailments have not included curtailment of Sacramento River diversions affecting the City of Sacramento's 1849 priority date.⁵⁵ **Table 3-4** shows water availability projections based on this reliability, however, it should be noted that curtailments in extreme conditions could still occur.

TABLE 3-4: PRE-1914 WATER FROM 2030 – 2050 (CFS)

Year Type		2030	2035	2040	2045	2050
Normal		75	75	75	75	75
Single Dry-Year		75	75	75	75	75
Multi-Year Drought	Year 1	75	75	75	75	75
	Year 2	75	75	75	75	75
	Year 3	75	75	75	75	75
	Year 4	75	75	75	75	75
	Year 5	75	75	75	75	75

Sacramento River Permit 992

Permit 992 (Application 1743), with a priority date of March 30, 1920, authorizes direct diversion of 225 cubic feet per second (cfs) year-round from the Sacramento River. Permit 992 has a maximum total volume available of 81,800 acre-feet per year (AFY). The authorized points of diversion include the SRWTP and the inlet at Pioneer Reservoir. Water at Pioneer Reservoir is diverted to flush the wastewater reservoir, after which, the surface diversions are pumped to the Sacramento Area Sewer District's EchoWater Resource Recovery Facility (EchoWater Facility). At this time, Pioneer Reservoir is not part of the City's potable water system.

The City's current authorized POU for water diverted under the Sacramento River permit includes all the land within the City Limits, which expands over time as the City's boundary expands. As shown in **Table 3-5**, 2016 to 2025 diversion volumes have ranged from over 40,000 to under 1,000 acre-feet per year. The City actively manages diversions based on hydrological, regulatory, and environmental conditions.

⁵⁵ <https://www.waterboards.ca.gov/drought/delta/#tableau>

TABLE 3-5: PERMIT 992 MANAGED SUPPLY, 2016 - 2025⁵⁶ (ACRE-FEET PER YEAR)

Year	Amount
2016	41,255
2017	10,485
2018	18,355
2019	13,072
2020	16,467
2021	14,303
2022	678
2023	34,310
2024	28,806
2025	822

Permit 992 Future Supply Availability and Long-Term Reliability

The City's Sacramento River diversions under Permit 992 are subject to the terms and delivery obligations of the USBR Operating Contract. As such, full volume of Permit 992 water is expected to be available, even in multiple dry years, as shown in the Supply Available columns in **Table 3-6** and **Table 3-7**.

For long-term risk planning purposes that consider climate change and projected hydrology, the City contemplates supply for normal, single-dry, and multi-year drought periods. These reference years for supply availability cannot reflect actual management decisions and actions that will be based on the City's Climate Adaptation and Watershed Resiliency framework that proactively plans for water resources resilience and redundancy in the context of increasing climate variability and unplanned watershed deficiencies or outages.

⁵⁶ Note: SWRCB reporting transitioned from Calendar Year (Jan-Dec) to Water Year (Oct-Dec) in 2021

TABLE 3-6: PERMIT 992 ESTIMATED FUTURE AVAILABILITY FROM 2026-2030 (ACRE-FEET PER YEAR)

Year Type		Supply Available
Normal		81,800
Single Dry-Year		81,800
Multi-Year Drought	2026	81,800
	2027	81,800
	2028	81,800
	2029	81,800
	2030	81,800

TABLE 3-7: PERMIT 992 ESTIMATED FUTURE AVAILABILITY – 2050 PLANNING HORIZON (ACRE-FEET PER YEAR)

Year Type		2030	2035	2040	2045	2050
Normal		81,800	81,800	81,800	81,800	81,800
Single Dry-Year		81,800	81,800	81,800	81,800	81,800
Multi-Year Drought	Year 1	81,800	81,800	81,800	81,800	81,800
	Year 2	81,800	81,800	81,800	81,800	81,800
	Year 3	81,800	81,800	81,800	81,800	81,800
	Year 4	81,800	81,800	81,800	81,800	81,800
	Year 5	81,800	81,800	81,800	81,800	81,800

3.2.4. American River Surface Water Assets

The City holds four State-issued water right permits authorizing diversions of American River water, representing a foundational component of Sacramento’s municipal water supply, regional water supply reliability, climate resiliency, and public trust benefits.

American River Permits 11358 and 11361

The City of Sacramento holds Permit 11358 (Application 12140, priority date October 29, 1947) and Permit 11361 (Application 16060, priority date September 22, 1954) on the American River. Together, these permits authorize direct diversion at a combined maximum rate of 675 cfs, with Permit 11358 authorizing up to 500 cfs and Permit 11361 authorizing up to 175 cfs. The face value of these entitlements, as authorized by the State Water Resources Control Board (SWRCB), totals approximately 366,848 acre-feet per year. Both permits provide for direct diversion from November 1 through August 1, with no diversions allowed during August,

September, and October, as established by the 1958 State Water Rights Board Decision-893 (D-893).

The primary point of diversion for both permits is at the E.A. Fairbairn Water Treatment Plant. The permits are designated for municipal purposes, including domestic, industrial, and recreational uses, within the City of Sacramento and adjacent areas covering approximately 79,500 acres, as shown in **Figure 3-1** below. Diversions under these permits are subject to several overlying conditions, including the City’s Water Forum Agreement’s flow and volume restrictions at the American River diversion point based on the Hodge Decision flow criteria for the Lower American River. Diversions are also limited by the USBR Operating Contract described in Section 3.2.1.

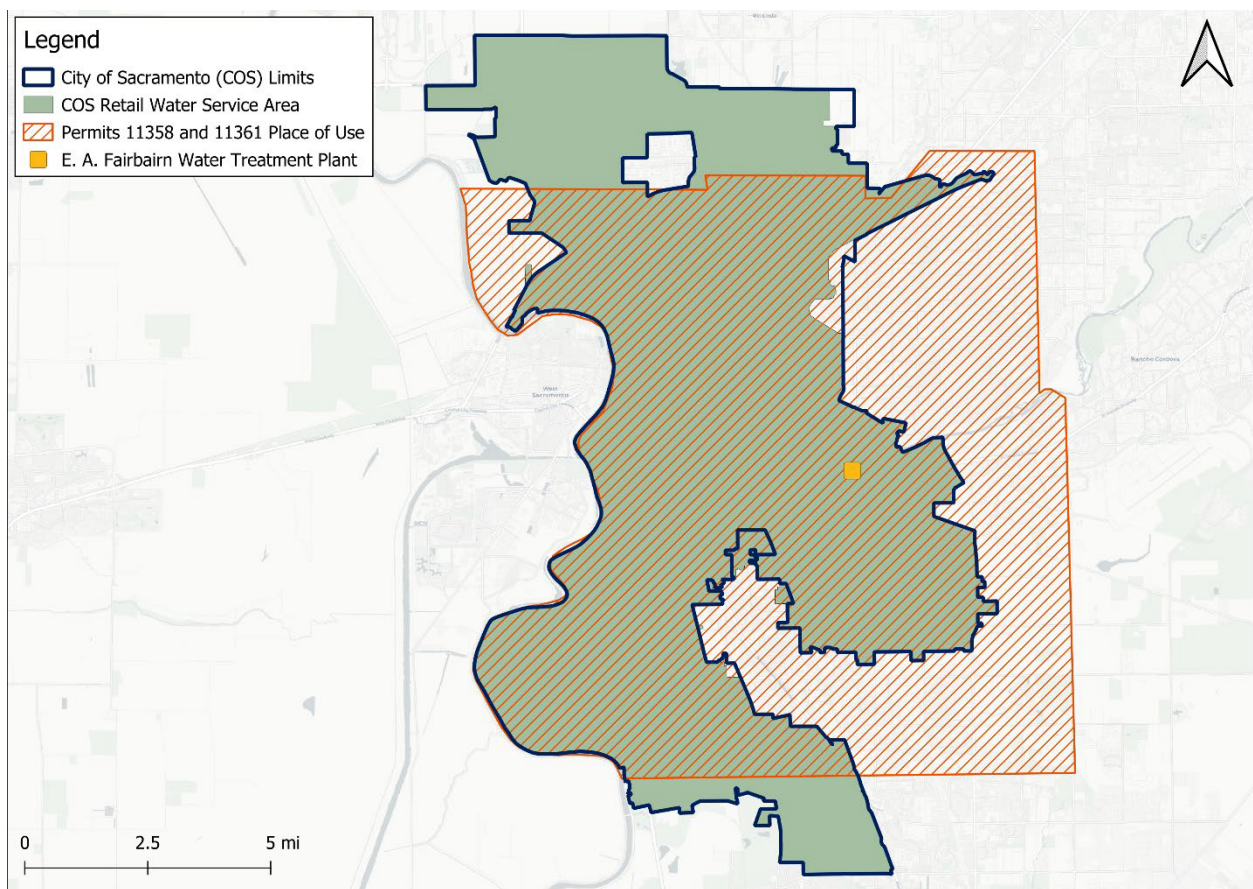


FIGURE 3-1: PLACE OF USE FOR PERMITS 11358 AND 11361 WITH PRIMARY POINT OF DIVERSION

American River Permits 11359 and 11360

Permits 11359 (Application 12321, priority date February 13, 1948) and 11360 (Application 12622, priority date July 29, 1948) were assigned to the City by the Sacramento Municipal Utility District in 1957 and issued in 1958. Permit 11359 authorizes direct diversion of 310 cfs and

275,000 AF of diversion to storage, with a maximum total volume available of 443,478.5 AFY. Permit 11360 authorizes 1,200 cfs direct diversion and 314,000 AF of diversion to storage, with a maximum total volume available of 966,174.8 AFY. Both permits allow direct diversion and diversion to storage from November 1 to August 1st. The City can divert water under both rights at EAFWTP and SRWTP. Moreover, because of the re-diversion from storage term, these permits allow for water supply to be rediverted at the City's water treatment plants in August, September and October. The place of use for both permits covers 96,000 acres of area that encompasses, but is not coterminous with, the city limit boundary. SWRCB maps reference this as the "ultimate water service and area of use boundary." **Figure 3-2** shows the points of diversion and re-diversion as well as the place of use for Permits 11359 and 11360.

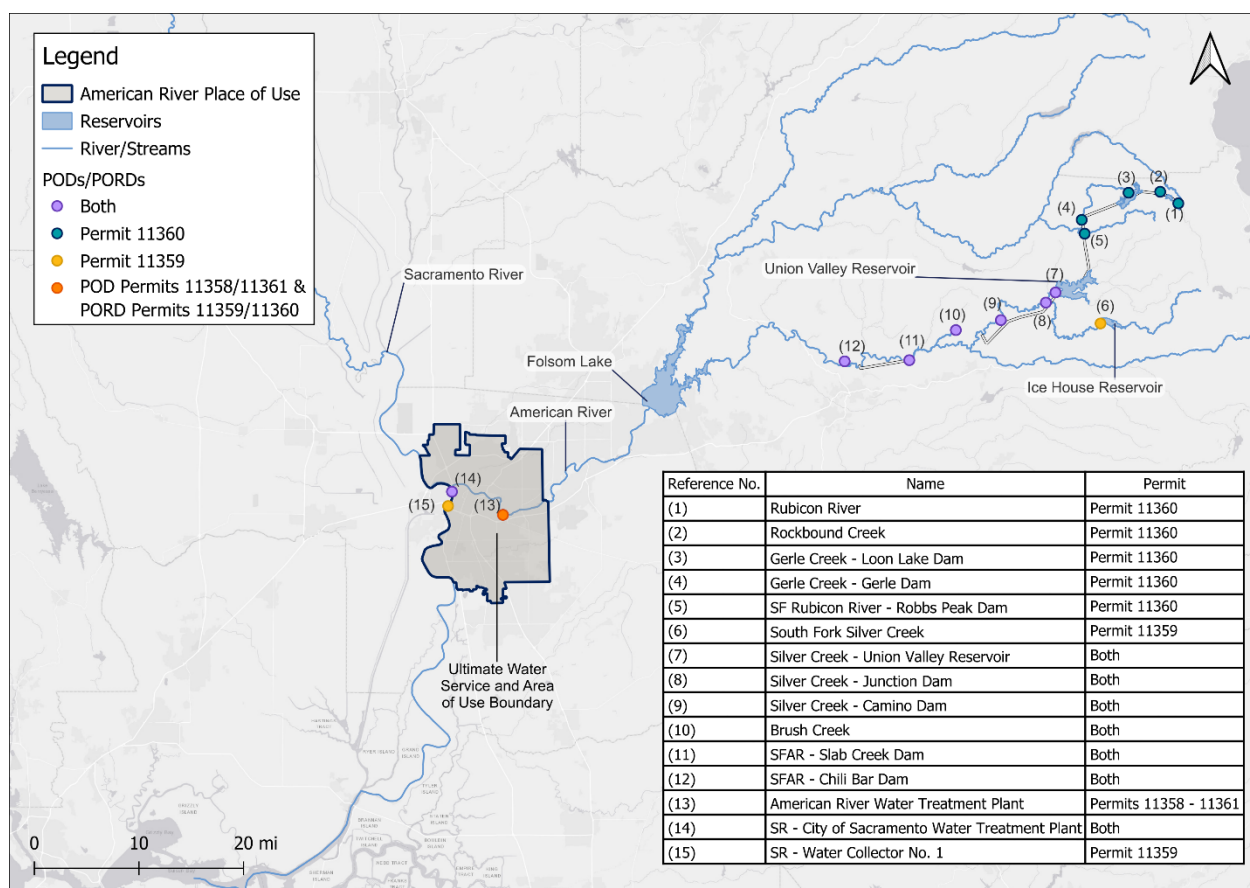


FIGURE 3-2: POINTS OF DIVERSION AND RE-DIVERSION

Unlike Permits 11358 and 11361, these permits authorize year-round re-diversion of previously stored water in connection with SMUD's Upper American River Project, providing significant operational flexibility. Re-diversion points include the City's water treatment plants on both the American River and Sacramento River. These permits are subject to the same overlying conditions as 11358 and 11361, including Water Forum Agreement restrictions at the American

River diversion point, and limitations imposed by the USBR Operating Contract. But the year-round re-diversion capability from storage provides operational advantages during dry periods and times of regulatory constraint.

TABLE 3-8: AMERICAN RIVER PERMITS SUPPLY, 2016 - 2025 (ACRE-FEET PER YEAR)

Year	Amount
2016	28,550
2017	34,634
2018	22,204
2019	33,924
2020	23,893
2021	31,714
2022	61,038
2023	37,544
2024	32,600
2025	65,617

American River Future Supply Availability and Long-Term Reliability

As discussed previously, the Operating Contract between the City and USBR obligates USBR to maintain sufficient flows in the American River to support agreed-upon diversions under the City's water rights. The contract provides for the USBR to deliver up to 245,000 AFY from the American River as set forth in Article 9 and Schedule B as long as the total combined diversion from both the Sacramento and American Rivers does not exceed the maximum combined diversion set forth in Schedule A. Though water available for diversion at the EAFWTP on the American River is subject to voluntary restrictions described in Section 3.2.6, the City may divert American River permit water at the SRWTP during periods when flows on the American River do not meet minimum flow rates. As such, the future availability for the City's American River permits is considered reliable in all year types and through the planning horizon as shown in **Table 3-9** and **Table 3-10**.

TABLE 3-9: AMERICAN RIVER ESTIMATED FUTURE AVAILABILITY FROM 2026-2030 (ACRE-FEET PER YEAR)

Year Type		Supply Available
Normal		228,000
Single Dry-Year		228,000
Multi-Year Drought	2026	231,500
	2027	235,000
	2028	238,500
	2029	242,000
	2030	245,000

TABLE 3-10: AMERICAN RIVER WATER AVAILABILITY – 2050 PLANNING HORIZON

Year Type		2030	2035	2040	2045	2050
Normal		245,000	245,000	245,000	245,000	245,000
Single Dry-Year		245,000	245,000	245,000	245,000	245,000
Multi-Year Drought	Year 1	245,000	245,000	245,000	245,000	245,000
	Year 2	245,000	245,000	245,000	245,000	245,000
	Year 3	245,000	245,000	245,000	245,000	245,000
	Year 4	245,000	245,000	245,000	245,000	245,000
	Year 5	245,000	245,000	245,000	245,000	245,000

3.2.5. Curtailments Under the 2021–2023 Drought Emergency Regulation

This section provides information on State Water Resources Control Board (SWRCB) regulatory actions during a recent drought emergency. This narrative is for informational purposes and does not contemplate the USBR Operating Contract obligations to make water available under terms described in Section 3.2.1.

Between August 20, 2021, and April 3, 2023, the SWRCB implemented emergency drought regulations for the Sacramento–San Joaquin Delta watershed. These measures authorized curtailments of water rights when hydrologic conditions indicated insufficient supply to serve all demands. For the City, impacts varied by right and season, with interruptions concentrated in mid-summer 2022. **Figure 3-3** summarizes the Sacramento River rights, and **Figure 3-4** summarizes the American River rights during this period.

As the City’s most senior right, the pre-1914 claim was not curtailed at any time during the Delta emergency-regulation period. Diversions remained available through the initial August 2021 actions and throughout 2022–2023, consistent with the strong reliability afforded by senior priority. Availability continued uninterrupted until the Delta curtailment orders were rescinded on April 3, 2023.

When the SWRCB enacted its emergency regulation on August 20, 2021, Permit 992 was included in the basin-wide curtailment but was restored the following month. In 2022, the right experienced a short suspension from July 6 through August 2, after which diversions resumed and remained available through the rest of 2022 and into 2023.

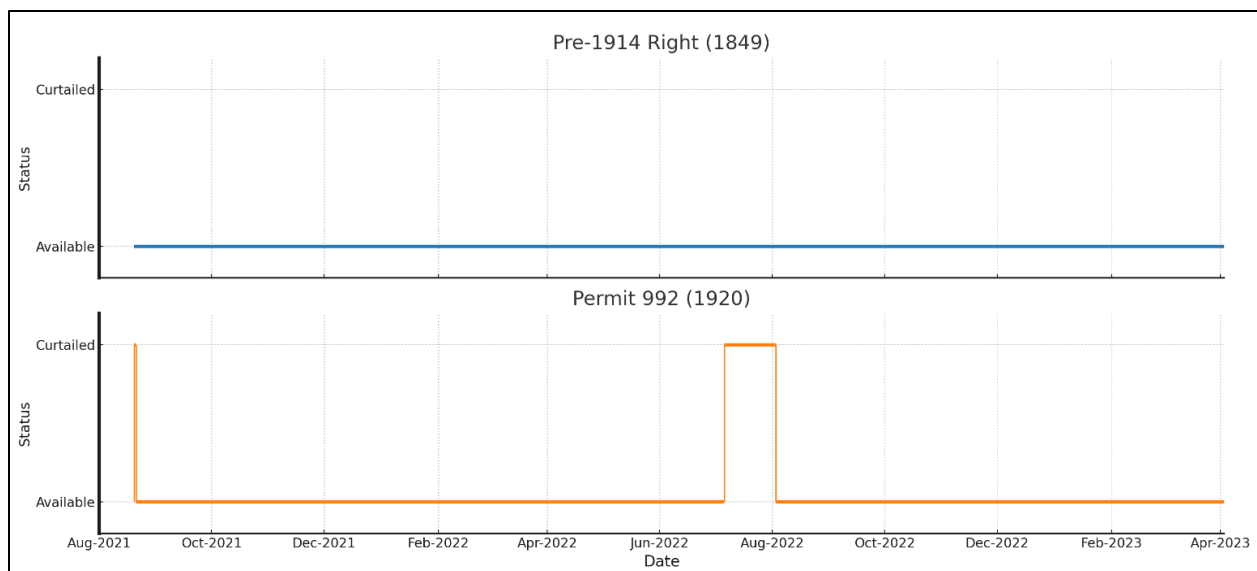


FIGURE 3-3: HISTORY OF CURTAILMENT FOR THE SACRAMENTO RIVER WATER RIGHTS, SACRAMENTO–SAN JOAQUIN DELTA DROUGHT EMERGENCY (AUG 20, 2021–APR 3, 2023)

Figure 3-3 above shows the timing and duration of curtailments for direct diversion of the City’s Sacramento River rights under the Sacramento–San Joaquin Delta drought emergency regulation. The senior Pre-1914 claim (blue) remained available throughout this period with no curtailments, while Permit 992 (orange) saw two brief suspensions, August 20, 2021, and July 6–August 2, 2022.

On the American River, Permit 11358 was first curtailed with the August 20, 2021 Delta actions and then restored in September 2021. In 2022, access was suspended during peak summer stress from July 6–August 30, with a single-day checkpoint curtailment on October 18, 2022. Diversions resumed after each event and remained available until Delta curtailment orders were rescinded on April 3, 2023.

Permit 11361 was also initially curtailed on August 20, 2021, and reinstated the following month. In 2022, it experienced the longest summer suspension among the American River permits—from July 6–September 13—plus a one-day checkpoint curtailment on October 18, 2022. Diversions were available thereafter through rescission on April 3, 2023.

Curtailment began for Permit 11359 with the Delta emergency implementation and persisted through early fall 2021 (August 20–October 13). The permit was restored in mid-October and remained available until renewed drought conditions prompted a summer 2022 suspension (July 6–August 30), followed by a single-day checkpoint curtailment on October 18, 2022. Access resumed promptly after each event and continued until the statewide Delta curtailment orders were rescinded on April 3, 2023.

Similar to Permit 11359, Permit 11360 was curtailed from the initial Delta action through October 13, 2021, then restored. It experienced a repeat suspension during the 2022 summer low-flow period (July 6–August 30) and a one-day curtailment on October 18, 2022. Diversions were available thereafter and continued without further interruption until the Delta curtailment orders were rescinded on April 3, 2023.

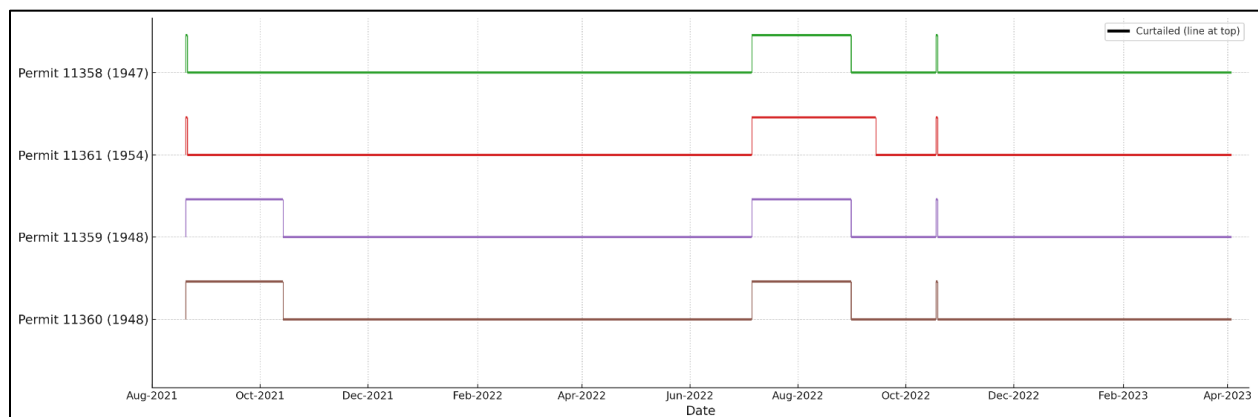


FIGURE 3-4: RECENT HISTORY OF CURTAILMENT FOR THE AMERICAN RIVER WATER RIGHTS, SACRAMENTO–SAN JOAQUIN DELTA DROUGHT EMERGENCY (AUG 20, 2021–APR 3, 2023)

As shown in **Figure 3-4** above, Permits 11358 (green) and 11361 (red) show brief 2021 curtailments and longer mid-summer 2022 suspensions (with 11361 extending to September 13), while Permits 11359 (purple) and 11360 (brown) show the longest overall restrictions—an extended 2021 curtailment (August 20–October 13), a July–August 2022 suspension, and a brief October 18, 2022 event.

The difference in utility of Permits 11358 and 11361 that are not stored in the American River as compared to Permits 11359 and 11360 that are stored in reservoirs in the American River was incredibly important during the curtailment orders. Water under Permits 11358 and 11361 were

unavailable for delivery but water stored under Permits 11359 and 11360 could be delivered because they had been properly stored under the terms of the water rights. This important distinction is a foundational component of the City's Climate Adaptation and Watershed Resiliency program. It should also be noted that Incongruities may exist between curtailment orders and water availability assurances provided by the Operating Contract.

3.2.6. Hodge Decision

The Hodge Decision, issued in 1990, established minimum flow requirements in the Lower American River. These flow requirements vary seasonally: 2,000 cfs from October through February, 3,000 cfs from March through June, and 1,750 cfs from July through mid-October, as shown in **Table 3-11** below. Although these flow requirements were specifically established for East Bay Municipal Utility District's American River diversions in the underlying litigation, Sacramento voluntarily incorporated them into its own American River permits for diversions at EAFWTP. These restrictions do not limit diversions at SRWTP under the City's American River permits after the American River joins the Sacramento River.

TABLE 3-11: HODGE FLOW CRITERIA IN THE AMERICAN RIVER

Period	Minimum Flow Requirement (cfs)
October 15 through February	2,000
March through June	3,000
July through October 15	1,750

Hodge conditions apply during extremely dry years, referred to as Conference Years, as well as during non-Conference Years when natural flows in the American River fall below the Hodge Flow Criteria. When natural flows fall below Hodge Criteria, the City has agreed to substantially reduce American River diversions, to as little as 100 cfs during October-December compared to the full 310 cfs available when natural flows are high. These voluntary restrictions apply to all four American River permits collectively as described in Section 3.2.6.

3.2.7. Water Forum Agreement Voluntary Restrictions

The City helped create and adopt the first Water Forum Agreement in January 2000 and the Water Forum 2050 effort that was completed in 2026. The City worked on these projects in partnership with regional water managers, local governments, business and agricultural leaders, and citizen and environmental caucuses. The Water Forum is an acclaimed water

management framework that balances regional water supplies for human uses with environmental objectives.

The City's Purveyor Specific Agreement (PSA) specifies the City's Water Forum commitments. Specifically, the PSA restricts EAFWTP diversions based on Folsom inflow projections and Hodge Criteria. During dry years, when projected unimpaired inflow to Folsom is 550,000 AFY or less, the City limits EAFWTP diversions to 155 cfs and 50,000 AFY, with graduated restrictions when Hodge Criteria are not met during other periods. Like the Hodge Decision, these limitations do not restrict diversions at SRWTP. **Table 3-12** below summarizes the graduated restrictions under the Water Forum Agreement.

TABLE 3-12: GRADUATED RESTRICTIONS ON EAFWTP DIVERSIONS UNDER THE WATER FORUM

Hydrologic Condition	Time Period	Maximum Diversion Rate	Maximum Annual Volume
Dry Year Restrictions Conditions <i>March-Nov unimpaired inflow to Folsom <400,000 AF</i> <i>or,</i> <i>Annual projected unimpaired inflow <550,000 AF</i>	Year-round	155 cfs	50,000 AFY
Hodge Criteria Restrictions <i>Flows below required minimums</i>	January – May	120 cfs	No specific annual limit
	June – August	155 cfs	
	September	120 cfs	
	October – December	100 cfs	
Flows Above Hodge Criteria <i>Oct-Feb: ≥ 2,000 cfs</i> <i>Mar-Jun: ≥ 3,000 cfs</i> <i>Jul-Oct: ≥ 1,750 cfs</i>	Year-round	310 cfs (200 MGD)	No specific annual limit

The Water Forum Agreement shapes Sacramento's American River water rights through voluntarily negotiated limitations that balance municipal supply with environmental protection. Most critically, the agreement institutionalizes Hodge Criteria by restricting EAFWTP diversions to specific volumes based on whether these flow thresholds are met. During the driest years, when projected unimpaired inflow to Folsom is 550,000 AFY or less, even stricter limitations apply, capping EAFWTP diversions at 155 cfs and 50,000 AFY regardless of demand. The City took these commitments to the State Water Resources Control Board and imbedded them in their American River water rights as a firm commitment to environmental flows.

These constraints apply collectively to all four American River permits, creating a unified operational framework for their management.

The Water Forum Successor effort (Water Forum 2050) also provides long-term environmental benefits to the Lower American River through the key diversion restrictions noted in **Table 3-12**. City Council approved the Water Forum 2050 Agreement on March 17, 2026.⁵⁷ The City's continued leadership and support for the next phase in the form of Water Forum 2050 encourages diverse regional stakeholders to support the City's and regional water development needs while simultaneously protecting species, habitats, and public trust resources. The Water Forum and its coequal objectives of a reliable and safe water supply for the region's economic health and development, balanced with the Lower American River's fishery, wildlife, and recreational values, is a fundamental underpinning of the City's Climate Adaptation and Watershed Resilience program.

3.3. Groundwater

The UWMP requires urban water suppliers to include specific details about groundwater in their UWMPs, such as the current and planned sources, groundwater management plans, basin descriptions, and past and projected pumping amounts.⁵⁸ This section provides a comprehensive understanding of groundwater use and sustainability within the City's service area.

Groundwater remains a critical and reliable component of the City of Sacramento's diversified water supply portfolio. The City of Sacramento maintains substantial groundwater assets across two major subbasins that complement its extensive surface water rights portfolio. The City relies on groundwater primarily as a conjunctive-use resource to supplement surface water supplies from the Sacramento and American Rivers, particularly during dry-year and curtailment conditions when surface water availability may be constrained. The City's approach to groundwater management emphasizes operational flexibility, supply reliability, and long-term sustainability in coordination with regional groundwater agencies and neighboring purveyors.

As an example, under the ARTESIAN (American River Terms for Ecosystem Support and Infrastructure Assistance Needs) agreements, the City of Sacramento participates in a regional conjunctive use strategy designed to improve water supply reliability during dry and critically dry years. In designated "call years," the City reduces its surface water diversions from the American and Sacramento Rivers and instead relies more on groundwater, either

⁵⁷ <https://waterforum.org/uncategorized/city-of-sacramento-approves-water-forum-2050-agreement/>

⁵⁸ California Water Code Section 10631(b)(4)

from its own facilities or through coordinated exchanges with regional partners. This temporary shift allows equivalent volumes of surface water to remain instream to support environmental objectives while maintaining reliable municipal supply. In non-call years, the City emphasizes surface water use where available to support groundwater basin recovery, reinforcing long-term sustainability and alignment with regional groundwater management goals. Similar arrangements are being considered for the pending Healthy Rivers and Landscapes program (see Section 3.6.3).

The City overlies two subbasins of the Sacramento Valley Groundwater Basin as defined by the “Department of Water Resources (DWR) in Bulletin 118, California’s Groundwater”: the North American Subbasin (Subbasin No. 5-21.64; hereafter “NASb”), located north of the American River, and the South American Subbasin (Subbasin No. 5-21.65; hereafter “SASb”), located to the south of the American River. Together, these subbasins underlie the City’s entire service area and form the basis of local groundwater management and planning efforts. Each subbasin has distinct hydrogeologic conditions, patterns of urban and agricultural use, and management frameworks that influence how the City operates its municipal wells.

Since the preparation of the 2020 UWMP, groundwater management in both subbasins has advanced substantially under the Sustainable Groundwater Management Act (SGMA). The Sacramento Groundwater Authority (SGA) serves as the Groundwater Sustainability Agency (GSA) for the portion of the NASb within Sacramento County, and the Sacramento Central Groundwater Authority (SCGA) fulfills that role for the SASb. Both agencies completed Groundwater Sustainability Plans (GSPs) in 2022, establishing measurable objectives, sustainability indicators, and minimum thresholds to maintain groundwater conditions consistent with SGMA. The City continues to coordinate closely with these agencies through data sharing, monitoring participation, and policy development to ensure City conjunctive use remains consistent with subbasin sustainability goals.

The City operates a network of municipal supply wells distributed across both subbasins to provide reliable groundwater production capacity. Since 2020, the City has advanced its Well Replacement Program, analyzed under the 2024 Final Environmental Impact Report (EIR), to systematically replace aging wells, improve treatment reliability, and sustain long-term production capacity. The program supports implementation of recommendations from the City’s 2017 Groundwater Master Plan and aligns with GSP sustainable yield targets.

With sustainable yield estimates of 336,000 AFY for the NASb and 235,000 AFY for the SASb,⁵⁹ these groundwater resources remain a viable asset for the City. As a legally protected component of the City's water supply portfolio, they provide immediate operational benefits while also offering long-term strategic value for water banking, drought resilience, and surface water asset preservation.⁶⁰

3.3.1. North American Subbasin

The NASb lies north of the American River and extends from the Bear River on the north to the Sacramento River on the west, bounded on the east by the Sierra Nevada Foothills' bedrock, a north-south line running toward Folsom Lake. **Figure 3-5** depicts the NASb and the City of Sacramento limits. The subbasin underlies portions of Sacramento, Placer, and Sutter Counties and includes a mix of urban and agricultural land uses. The North American Subbasin Groundwater Sustainability Plan (NASb GSP) divides the subbasin into three distinct areas – Western, Central, and Eastern – based on differences in groundwater conditions. These variations are primarily influenced by the availability of surface water across the areas.

The geology of the subbasin consists of a thick sequence of continental deposits that form an extensive, generally unconfined aquifer system in the upper 300 feet and a semi-confined aquifer system below. The principal water-bearing units include the Quaternary Alluvium, and the Riverbank, Turlock Lake, Modesto, and Laguna Formations, with deeper semi-confined zones associated with the Mehrten Formation.

⁵⁹ The sustainable yield for the NASb is 336,000 acre-feet per year (AFY), and for the SASb is approximately 235,000 AFY on average, ranging from 210,000 to 270,000 AFY in a given year (SGA-GSA et al., 2021; NDGSA et al., 2021; City of Sacramento, *Well Replacement Program Draft EIR*, 2023).

⁶⁰ The City of Sacramento filed its first statement of cessation of or reduction in the extraction of groundwater per CWC Section 1005.4 in 2025.

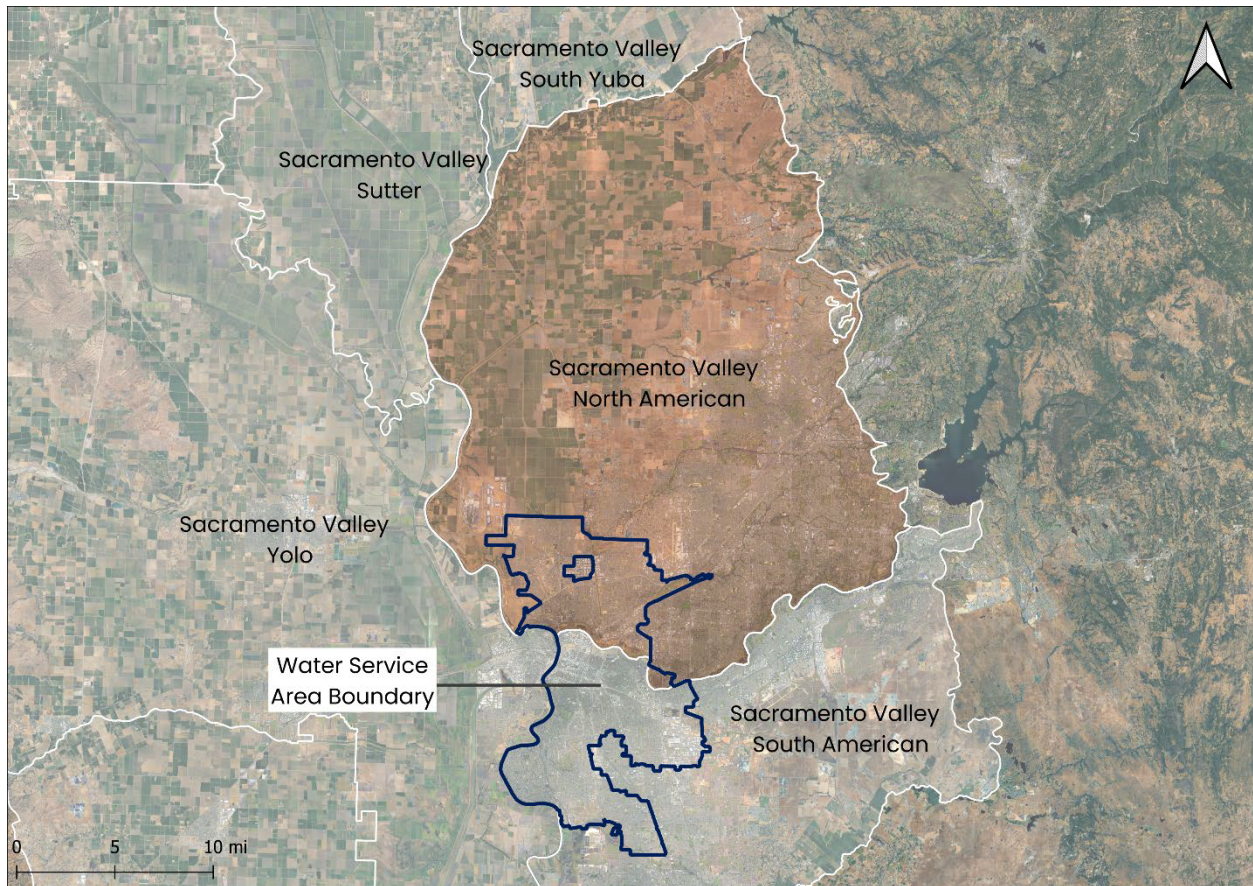


FIGURE 3-5: NORTH SUBBASIN WITHIN THE SACRAMENTO VALLEY BASIN – NORTH AMERICAN SUBBASIN

3.3.2. South American Subbasin

The South American Subbasin lies south of the American River and extends to the Cosumnes and Mokelumne Rivers on the south, the Sierra Nevada foothills on the east, and the Sacramento River on the west. The subbasin encompasses much of central and southern Sacramento County and includes extensive urbanized areas as well as agricultural lands.

Figure 3-6 depicts the SASb and the City of Sacramento limits. The geologic formations in the South American Subbasin are similar to those in the North American Subbasin, with younger unconsolidated alluvial deposits overlying the semi-consolidated Mehrten Formation.

The geologic formations underlying the SASb are similar to those of the North American Subbasin (NASb), consisting primarily of younger unconsolidated alluvial deposits overlying the semi-consolidated Mehrten Formation. The SASb contains one primary aquifer system that is commonly divided into an upper and lower aquifer. The upper aquifer is typically used for private domestic and small irrigation wells, while the lower aquifer yields greater production rates of high-quality water, supporting larger municipal supply wells.

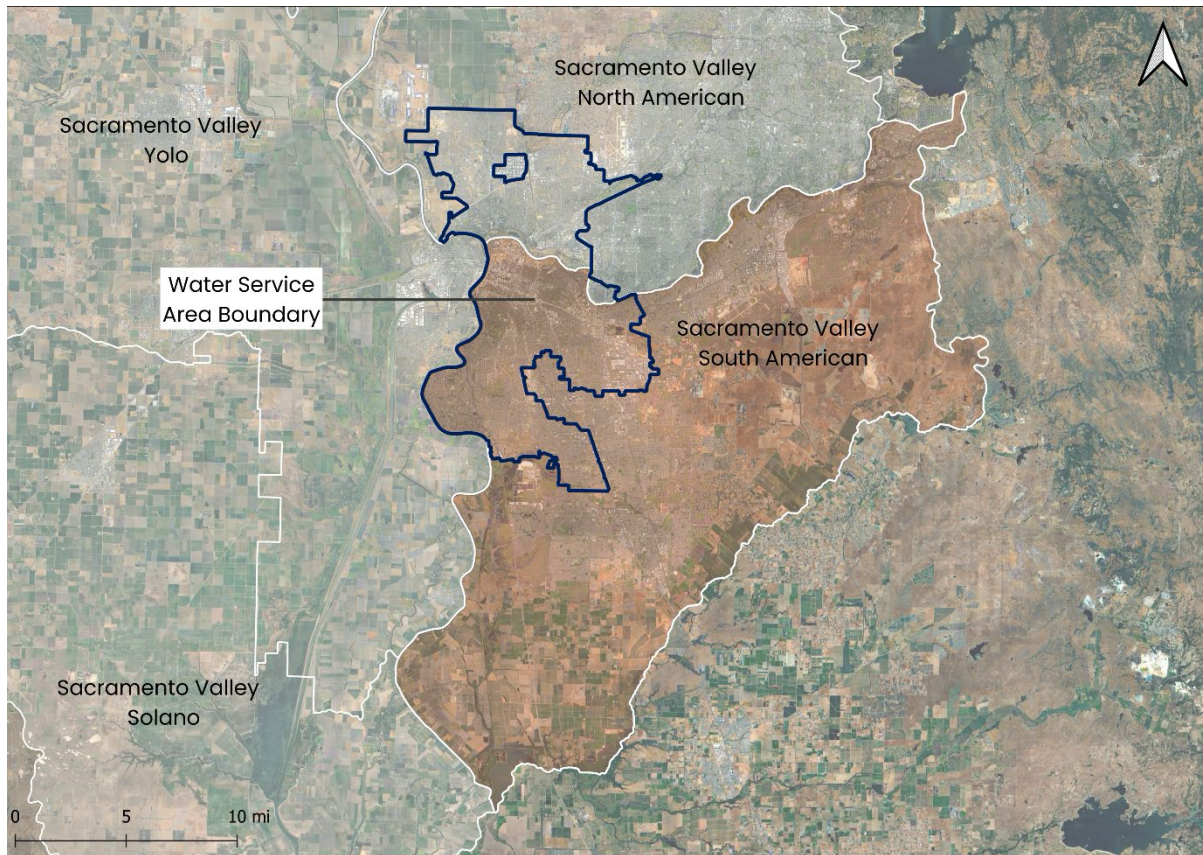


FIGURE 3-6: SOUTH SUBBASIN WITHIN THE SACRAMENTO VALLEY BASIN – SOUTH AMERICAN SUBBASIN

3.3.3. Management and Conjunctive Use

The City participates in regional planning groups and plays a leadership role in several sustainability initiatives and programs affecting groundwater resources management.

Sacramento Groundwater Authority

SGA serves as the GSA for the portion of the subbasin within the City boundary. The North American Subbasin GSP, adopted in 2022, establishes measurable objectives and sustainability criteria for groundwater levels, storage, quality, and subsidence. Within the City, groundwater elevations have become stable in the mid-2010s, and no chronic lowering of water levels or significant water-quality degradation has been reported.⁶¹ In fact, groundwater levels have been increasing recently due to groundwater banking (see Sacramento Regional Groundwater Bank section below). The City continues to participate in SGA's regional monitoring network and contributes data from municipal wells to support basin-wide assessments and annual reporting to DWR.

⁶¹ Woodard & Curran, Inc. (2023). Draft Environmental Impact Report. Page 3.9-3.

Sacramento Central Groundwater Authority

Groundwater management within the SASb is coordinated by SCGA. SCGA was formed through a Joint Powers Agreement, which includes the City and serves as the SASb GSA. SCGA's jurisdiction covers the majority of the SASb and some adjacent portions of the Consumnes Subbasin. SCGA's membership includes public agencies, private water purveyors, and groundwater users from multiple sectors, all of whom rely on sustainable groundwater to support their communities and operations. The South American Subbasin GSP, also adopted in 2022, establishes sustainability thresholds and management actions to maintain groundwater levels, prevent water-quality degradation, and avoid significant land subsidence. The City participates in SCGA activities through inter-agency coordination and supports the GSP's data-collection and implementation framework.

Regional Water Authority

The Regional Water Authority (RWA) is a Joint Powers Authority formed in 2001 to provide a regional forum for addressing water resource issues in the greater Sacramento–Placer region. RWA represents approximately two dozen water providers and affiliated agencies, including 21 water supplier members and three associate members across Sacramento, Yolo, Placer, and El Dorado Counties. Although implementation of the Water Forum Agreement was a primary driver in its formation, RWA's role has expanded to include regional coordination on water supply reliability, conjunctive use, groundwater management, and water conservation.

RWA assists its member agencies in implementing the conjunctive use, groundwater management, and water conservation provisions of the Water Forum Agreement and facilitates coordinated responses to emerging water management challenges. In 2002, RWA assumed responsibility for managing operations of the Sacramento Groundwater Authority, further strengthening its role in regional groundwater management and conjunctive use activities.

The City of Sacramento is an active RWA member and participates in regional water management initiatives through both RWA and the Sacramento Groundwater Authority. The City contributes to regional conjunctive use strategies, groundwater sustainability planning, and coordinated water supply reliability efforts, and supports broader initiatives such as the Sacramento Regional Water Bank to help align local groundwater operations with basin-wide sustainability and regional water management objectives.

Sacramento Regional Water Bank

The Sacramento Regional Water Bank (RWB) is a regional groundwater storage and recovery program being developed by a coalition of local water agencies, including the City of Sacramento and the Regional Water Authority (RWA). Led by RWA, the RWB is designed to store excess surface water in underground aquifers during wet years and recover it during dry periods. By using the region's aquifers as a natural storage system, the RWB is expected to provide storage capacity exceeding twice that of Folsom Reservoir, strengthening regional water supply reliability and resiliency.

Conjunctive use in the Sacramento region has evolved over the past three decades through coordinated groundwater management and regional reliability efforts. In the NASb, conjunctive use was formalized under the Water Forum Agreement to maintain sustainable groundwater yield, coordinate pumping among participating agencies, protect groundwater quality, and promote basin-wide management. In the SASb, local agencies implemented conjunctive use to diversify supplies, address groundwater contamination risks, and improve overall reliability.

Building on these efforts, RWA is leading development of the RWB to expand and coordinate conjunctive use across the North and South American Subbasins. Through groundwater banking and recovery, the RWB provides a regional framework to enhance water supply reliability for local communities while supporting ecosystem function along the lower American River.

Long-term conjunctive use and groundwater banking in the NASb and SASb have increased groundwater levels and supported sustainable basin conditions. Higher groundwater levels have supported contributions to streams, enhancing baseflow in regional rivers, particularly the American River, and increasing subsurface inflows to adjacent subbasins. After more than three decades of coordinated management, these efforts have contributed to stable groundwater conditions and supported DWR approval of the GSPs for both subbasins.

As a result of these long-term conjunctive-use practices, a substantial volume of groundwater has been stored over time. Within the context of RWB operations, this stored groundwater is referred to as Previously Banked Water (PBW). While PBW represents an important regional water supply asset, stored groundwater both affects and is affected by interconnected rivers and adjacent groundwater subbasins. Consequently, volumes of previously banked water must be reconciled to account for hydrologic interactions such as stream seepage, boundary flows, and interbasin exchange before determining the portion of

PBW that remains recoverable for future use. These interactions and their implications for groundwater banking are documented in the *Analysis of Previously Banked Water* (2025).⁶²

Six agencies have submitted PBW documentation meeting RWB eligibility criteria. In the North American Subbasin, these agencies are California American Water, Carmichael Water District, the City of Sacramento, and Sacramento Suburban Water District. In the South American Subbasin, Golden State Water Company and Sacramento County Water Agency qualify. Together, they represent the initial participants in the RWB.

Applying the adopted eligibility, verification, and hydrologic reconciliation procedures, total verified PBW as of September 30, 2024, is estimated at approximately 468-thousand-acre feet (TAF) in the NASb and 431 TAF in the SASb, for a combined total of about 899 TAF. After accounting for net contributions to surface water systems and adjacent subbasins, recoverable in-basin PBW is estimated at approximately 248 TAF in the NASb and 222 TAF in the SASb, for a total of about 471 TAF available for potential recovery under the RWB framework. **Table 3-13** summarizes the verified total PBW balances and the adjusted in-basin PBW volumes by agency and subbasin.

TABLE 3-13: INITIAL PBW BALANCES AS OF SEPTEMBER 2024 AND VOLUMES OF PBW REMAINING

Agency	PBW (AF)	In-Basin PBW (AF)
North American Subbasin		
California American Water Company	17,102	9,100
City of Sacramento	90,035	47,800
Carmichael Water District	91,887	48,800
Sacramento Suburban Water District	268,541	142,600
North American Subbasin – Subtotal	467,565	248,300
South American Subbasin		
Golden State Water Company	215,166	110,800
Sacramento County Water Agency	216,327	111,500
South American Subbasin – Subtotal	431,493	222,300
TOTAL	899,058	470,600

⁶² Regional Water Authority (RWA). 2025. *Sacramento Regional Water Bank: Analysis of Previously Banked Water*. Version 1, September 10, 2025. Prepared by Woodard & Curran.

The remaining in-basin PBW provides important benefits. Elevated groundwater storage supports aquifer health, advances GSP objectives, and provides drought resilience and operational flexibility. Higher groundwater levels also reduce the need for deep pumping, lowering energy use, greenhouse gas emissions, and operating costs.

Conjunctive use has also produced measurable regional and environmental benefits beyond the subbasin boundaries. Hydrologic interactions have increased stream baseflows and subsurface outflows to adjacent basins. Over the 27-year evaluation period, conjunctive use increased regional baseflows by an average of approximately 13.8 TAF per year, for a cumulative total exceeding 386.9 TAF. In the Lower American River, average annual baseflow increases are estimated at about 11.4 TAF, totaling more than 318.4 TAF over the same period, consistent with objectives of the Water Forum Agreement.

Although some PBW has migrated through natural hydrologic processes, these actions have generated substantial regional benefits while leaving a significant volume of recoverable groundwater to support future water supply reliability through the Sacramento RWB.

3.3.4. Groundwater Wells and Supply

Groundwater remains a key component of the City of Sacramento's water supply portfolio, historically meeting about 15 to 20 percent of total annual demand, although this percentage has decreased in recent years. As wells are replaced, it is expected that groundwater use will rebound to these levels at some point in the future, especially in critical drought conditions. While surface water from the Sacramento and American Rivers is the City's primary source under its appropriative permits and pre-1914 entitlement, groundwater provides flexibility during dry periods and when surface water supplies are limited by hydrologic, regulatory, or voluntary constraints.

The City's groundwater management approach is guided by the 2017 Groundwater Management Plan and adopted Environmental Impact Report, which established a Well Replacement Program to maintain reliable production capacity, particularly during dry and critically dry years that may become more frequent with climate change. The program supports supply reliability, system redundancy, and portfolio diversification, and enables strategic conjunctive use to help sustain regional surface and groundwater resources.

The ongoing Well Replacement Program aims to restore the City's historical capacity and total yield by replacing or modernizing aging wells in both the NASb and SASb. When fully implemented, the replacement program will enhance operational redundancy, improve water quality consistency, and maintain the City's ability to meet projected groundwater demands through 2045.

Both the NASb and the SASb are designated by DWR as high-priority basins under SGMA but are not in critical overdraft. Groundwater Sustainability Plans for both subbasins were submitted in 2022 and approved in 2023, establishing sustainable management criteria, minimum thresholds, and long-term groundwater budgets. Modeling prepared for the GSPs and the City’s Well Replacement Program indicates that current and projected pumping will not cause chronic water level declines or long-term storage deficits.⁶³ Continued GSP implementation and coordinated basin management are expected to maintain sustainable conditions, allowing groundwater to remain a reliable component of the City’s supply portfolio throughout the UWMP planning horizon.⁶⁴

Historical Groundwater Production

The City’s groundwater pumping is part of a conjunctive use strategy and occurs within the NASb and the SASb. Most historical groundwater production has occurred in the NASb, consistent with the location of the City’s older wellfields and historical land use patterns. Over time, groundwater pumping patterns have evolved as new wells have been constructed, older wells have been retired, and surface water treatment capacity has expanded.

The City’s understanding of historical groundwater use is supported by the CoSANA regional integrated groundwater–surface water model, which incorporates decades of land use, hydrologic, and operational data. Under the “Existing Conditions Baseline” hydrologic simulation (based on water years 1970–2019), the City’s pumping patterns can be summarized as follows:

North American Subbasin: The City’s historical groundwater pumping in the NASb averages approximately 20,000 acre-feet per year (AFY). Pumping is higher during dry and critically dry years, ranging from about 13,800 AFY in wet years to over 41,000 AFY in the driest years.⁶⁵

⁶³ The Technical Memorandum demonstrates that groundwater budgets, long-term storage trends, groundwater levels, and SGMA sustainability criteria remain consistent with the adopted GSPs, and that the proposed Well Replacement Program does not result in undesirable results or conditions indicative of overdraft. Sections 3.1–3.6 and Section 4.

⁶⁴ The Technical Memorandum states that the Well Replacement Program is already incorporated into the GSP Projected Conditions scenario and “is not expected to impact the sustainable management of either subbasin according to SGMA,” further demonstrating consistency with long-term sustainable groundwater conditions.

⁶⁵ Woodard & Curran. (2023). City of Sacramento Groundwater Modeling Technical Memorandum. *Table 4: North American Subbasin Annual Groundwater Pumping by Water Year Type under Existing Conditions Baseline, No Project Scenario, and Preferred Scenario.*

South American Subbasin: The City’s historical groundwater pumping in the SASb averages approximately 4,200 AFY, with annual volumes ranging from about 1,700 AFY in wet years to nearly 12,000 AFY in dry and critically dry years.⁶⁶

Citywide Total: Combined groundwater production under historical conditions averages 24,200 AFY, with total pumping ranging from about 15,500 AFY in wet years to more than 53,000 AFY during the driest hydrologic conditions.⁶⁷

Groundwater Use – Past Five Years

The number of current wells that are active, inactive, or out of service changes over time due to ongoing operations, rehabilitation, changes in water quality regulations, and construction activities. The City also owns and operates 17 irrigation/park supply wells. These irrigation wells are not recognized as potable supply and therefore are not submitted as part of the City’s monthly reporting to the SWRCB SAFER Clearinghouse or summarized in the annual auto-generated Clearinghouse Annual Inventory Report (CAIR Report).

Historical retail groundwater pumping from 2021 through 2025 from each subbasin is shown in **Table 3-14**.

TABLE 3-14: RETAIL GROUNDWATER VOLUME PUMPED (ACRE-FEET PER YEAR)

Basin Name	2021	2022	2023	2024	2025
North American Subbasin (No. 5-21.64)	17,440	17,630	10,840	8,295	5,534
South American Subbasin (No. 5-21.65)	1,397	1,394	1,392	1,563	1,071

The City’s wholesale water supply agreements are primarily supported by surface water, but in some instances, conjunctive use fulfills wholesale demands. Historical groundwater deliveries are summarized in **Table 3-15** below.

TABLE 3-15: WHOLESALE GROUNDWATER VOLUME PUMPED (ACRE-FEET PER YEAR)

Basin Name	2021	2022	2023	2024	2025
North American Subbasin	815.7	758.7	755	826	866

⁶⁶ Woodard & Curran. (2023). City of Sacramento Groundwater Modeling Technical Memorandum. *Table 5: South American Subbasin Annual Groundwater Pumping by Water Year Type under Existing Conditions Baseline, No Project Scenario, and Preferred Scenario.*

⁶⁷ Woodard & Curran. (2023). City of Sacramento Groundwater Modeling Technical Memorandum. *Table 6: City of Sacramento Total Annual Groundwater Pumping by Water Year Type under Existing Conditions Baseline, No Project Scenario, and Preferred Scenario.*

Projected Groundwater Use

Groundwater will continue to support the City's conjunctive use strategy throughout the UWMP planning horizon, providing flexibility under variable hydrologic conditions. Future production assumptions are based on the 2017 Groundwater Master Plan, the adopted Groundwater Sustainability Plans for the North American and South American Subbasins, the Well Replacement Program, and regional modeling conducted with the CoSANA integrated groundwater and surface water model.

As described previously, the Well Replacement Program will modernize aging wells to restore the City's historical capacity and total yield. The program also allows for a shift in a portion of production from the NASb to the SASb. This shift is reflected in the CoSANA Preferred Project Scenario evaluated in the Environmental Impact Report, which represents a conservative upper bound of future groundwater use while remaining consistent with SGMA and the GSPs.⁶⁸

The Preferred Project Scenario reflects an upper-bound modeling condition in which groundwater is assumed to meet demands prior to the use of available surface water supplies. This approach is used for modeling purposes to test basin response under higher pumping levels and is not intended to represent typical annual operations. This scenario effectively simulates continuous operation of the City's well system at or near 90 percent production capacity (i.e., all available wells operating) and is intended to evaluate basin response under sustained high pumping conditions in severe dry periods (beginning year 3 of a multi-year drought). It does not represent typical or expected annual operations.

Under this scenario, average annual groundwater pumping is projected to be approximately 38,700 AFY citywide.⁶⁹ In the North American Subbasin, average pumping remains near 20,000 AFY, generally consistent with historical levels. In the SASb, average pumping increases to about 20,000 AFY due to replacement well capacity and the planned production shift.

During dry and critically dry years, modeled groundwater production may increase substantially, with the total pumping reaching approximately 81,000 AFY when groundwater supplies a larger share of demand.⁷⁰

⁶⁸ The future planning period for the EIR groundwater modeling is based on the City's 2040 projections from the 2015 UWMP, consistent with the GSP modeling analysis.

⁶⁹ Woodard & Curran. (2023). City of Sacramento Groundwater Modeling Technical Memorandum. *Table 6*.

⁷⁰ Woodard & Curran. (2023). City of Sacramento Groundwater Modeling Technical Memorandum. *Table 6*.

Model results indicate that these projected pumping levels remain within sustainable limits. Simulated groundwater elevations stay above minimum thresholds established in the GSPs, storage trends remain stable, and no undesirable results are triggered over the 50-year modeling period. This analysis demonstrates that the subbasins can accommodate the City’s projected groundwater use through the UWMP planning horizon while maintaining compliance with SGMA.

Accordingly, projected groundwater use reflects both a conservative sustainability evaluation and the City’s continued reliance on conjunctive management to maintain a reliable and adaptable water supply portfolio through 2050 and beyond.

Table 3-16 depicts the City’s projected groundwater use from 2026 to 2030 in dry year conditions, and **Table 3-17** shows projected groundwater use over the planning horizon multi-year droughts.

TABLE 3-16: PROJECTED GROUNDWATER FROM 2026-2030 (ACRE-FEET PER YEAR)⁷¹

Year Type		Supply Available
Normal		21,645
Single Dry-Year		31,054
Multi-Year Drought	2026	31,054
	2027	31,054
	2028	48,953
	2029	48,953
	2030	53,726

⁷¹ Based on the Existing Conditions Baseline Pumping from the City of Sacramento Groundwater Modeling Technical Memorandum Table 6. May not reflect City’s current active well status. Assumes increased yield of 29 permitted wells in the Existing Conditions scenario.

TABLE 3-17: PROJECTED GROUNDWATER – 2050 PLANNING HORIZON⁷²

Year Type		2030	2035	2040	2045	2050
Normal		35,864	35,864	35,864	35,864	35,864
Single Dry-Year		47,690	47,690	47,690	47,690	47,690
Multi-Year Drought	Year 1	47,690	47,690	47,690	47,690	47,690
	Year 2	47,690	47,690	47,690	47,690	47,690
	Year 3	81,290	81,290	81,290	81,290	81,290
	Year 4	81,290	81,290	81,290	81,290	81,290
	Year 5	81,290	81,290	81,290	81,290	81,290

3.4. Other Water Sources

California Water Code Sections 10631(g) and 10633 require urban water suppliers to describe and quantify all water sources beyond primary surface water and groundwater supplies, including wastewater collection, treatment, and disposal systems; the potential for recycled water use; opportunities for desalinated water development; and any purchased or imported water supplies. The following subsections address each of these supply categories as they apply to the City of Sacramento's service area. This section also provides narrative on water transfer activity.

3.4.1. Indirect Water Reuse and Recycled Water

Wastewater Collection, Treatment, and Disposal

The City's DOU collects and conveys wastewater from residential, commercial, and industrial customers for treatment and disposal which is provided by SacSewer at the EchoWater Facility. The City currently collects and transports wastewater through two systems, the City's Combined Sewer System (CSS) and the City's Separated Sewer System (SSS). Most of the wastewater collected from the CSS and all of the wastewater collected in the SSS is delivered to the EchoWater Facility.

About 57,600 AF of wastewater was collected in the City's service area in the 2025 Fiscal Year, shown in **Table 3-18** below.

⁷² Based on the Preferred Project Scenario from the 2023 City of Sacramento Groundwater Modeling Technical Memorandum (Table 6). The 81,290 AF represents a maximum theoretical pumping condition, assuming continuous operation of all 42 wells at approximately 90% capacity in the absence of other supplies. This scenario was evaluated and determined to be within the sustainable yield constraints of the GSP.

TABLE 3-18: RETAIL WASTEWATER COLLECTED WITHIN SERVICE AREA IN 2025

Name of Wastewater Collection Agency	Wastewater Volume Metered or Estimated?	Volume of Wastewater Collected from UWMP Service Area 2025	Name of Wastewater Treatment Plant (WWTP)	Is WWTP Located Within UWMP Area?
City of Sacramento	Estimated	516	City of Sacramento	Yes
City of Sacramento	Estimated	18	City of Sacramento	Yes
City of Sacramento	Estimated	32,000	SacSewer	No
SacSewer	Estimated	25,000	SacSewer	No
Total Wastewater Received from UWMP Service Area in 2025:		57,534		
NOTES: Units are in acre feet (AF). Combined wastewater treatment plant includes flow from stormwater as it is a combined system. Volume collected is for the 2025 fiscal year, July 2024 through June 2025.				

Combined Sewer System

Constructed between the late 1800s and 1946, the Combined Sewer System (CSS) serves residences and businesses within approximately 11,240 acres of the City. Of this area, about 7,540 acres, generally within Downtown, East Sacramento, and Land Park, contribute both sanitary sewage and storm drainage flows to the CSS. The remaining 3,700 acres, generally within East Sacramento, River Park, and Tahoe Park, contribute only sanitary sewage. Although these areas originally conveyed combined flows, the sanitary sewer and storm drainage systems were separated in the 1950s to improve operations by diverting stormwater to a dedicated system.

The CSS includes approximately 345 miles of pipe ranging from 4 to 120 inches in diameter. Flows are conveyed westward to two major pump station complexes, Pump Station 1/1A/1B and Pump Station 2/2A, located near the Sacramento River. Pump Stations 1B and 2A operate continuously throughout the year, while Pump Stations 1, 1A, and 2 operate only during significant storm events. Additional City facilities include the Pioneer Reservoir, an offline storage basin that also provides primary treatment, and the Combined Wastewater Treatment Plant (CWTP), which provides primary treatment with a capacity of 130 mgd. Pioneer Reservoir has a peak hydraulic capacity of approximately 350 mgd and a treatment capacity of about 250 mgd.

The City maintains an agreement with SacSewer that allows conveyance of up to 60 mgd to the EchoWater Facility for tertiary treatment. While this agreement historically supported discharge to the Sacramento River, current operations primarily direct this water for

groundwater recharge in the southern portion of the service area and recycled water applications. This capacity is sufficient to treat all dry weather sanitary flows from the CSS, approximately 12 to 16 mgd, as well as flows from low intensity storm events. During moderate to large storms, when flows exceed 60 mgd, excess volumes are routed to the CWTP and/or Pioneer Reservoir for storage and primary treatment. When storage capacity is exceeded, flows that have received primary treatment, including chlorination and dechlorination, are discharged to the Sacramento River. If both storage and treatment capacities are fully utilized, additional CSS flows may be discharged directly to the river from Sump 2 and/or Sump 1. Primary treatment consists of mechanical settling to remove oil and approximately 50 percent of settleable solids.

Effluent treated at the CWTP and Pioneer Reservoir does not meet recycled water quality standards because treatment is limited to primary processes. In addition, these facilities operate intermittently during major storm events and therefore do not provide a reliable supply for recycled water customers.

As shown in **Table 3-19**, Pioneer Reservoir treated 534 AF of wastewater for the 2025 fiscal year that was discharged. CWTP had 18 AF of discharges in the 2025 fiscal year.

TABLE 3-19: RETAIL WASTEWATER TREATMENT AND DISPOSAL WITHIN SERVICE AREA IN 2025

Wastewater Treatment Plant Name	Does This Plant Treat Wastewater Generated Outside the UWMP Service Area?	2025 Volume of Wastewater Received from UWMP Service Area	Total 2025 Volume of Water Treated
Pioneer Reservoir	No	516	516
CWTP	No	18	18
Total		534	534
NOTES: Units are in acre feet (AF). Pioneer and CWTP provide primary treatment only during large storm events. Volume collected is for the fiscal year, July through June.			

Separated Sewer System

In addition to the Combined Sewer System, the City operates a Separated Sewer System within approximately 60 percent of the area outside the CSS service boundary. The remaining areas of the City are served by the Sacramento Area Sewer District (SacSewer), which also provides service to most of Sacramento County. The City's Separated Sewer System consists

of approximately 482 miles of pipeline ranging from 4 to 36 inches in diameter and 48 pump stations. Figure 6-2 illustrates the area served by the Separated Sewer System.

Flows collected by the City's Separated Sewer System are conveyed through an interceptor system of large diameter pipelines and pump stations to the EchoWater Facility for treatment and disposal. The interceptor system and the EchoWater Facility, located just south of the City limits, are owned and operated by SacSewer.

EchoWater Facility

The EchoWater Facility, located near Elk Grove, provides tertiary treatment for approximately 1.6 million residents in the region. The facility treats an average of 135 million gallons of wastewater per day. Following completion of a comprehensive, multi-year upgrade, EchoWater now removes about 99 percent of ammonia and 89 percent of nitrogen from influent wastewater, significantly improving effluent quality for discharge and recycled water applications.

Current, Potential, and Projected Recycled Water Uses

In 2020, Regional San (now operating as SacSewer following a merger) completed construction of a six-mile recycled water pipeline from the former Sacramento Regional Wastewater Treatment Plant, to deliver recycled water to the SPA Cogen Facility near the intersection of Franklin Boulevard and 47th Avenue. The SPA Cogen Facility is located outside the City limits but within the City's American River Place of Use. The SPA Cogen Facility relies on potable water supplied by the City for cooling tower operations and to serve as a backup for flushing higher-saline water.

Recycled water deliveries to the SPA Cogen Facility began in 2020, with approximately 29 AF delivered that year. Deliveries have increased over time as the system has ramped up, reaching approximately 331 AF in 2025. Future deliveries are anticipated to reach approximately 1,000 AFY by the year 2030, however, expansion of the recycled water system is undetermined at this time. Current and projected recycled water use is summarized in **Table 3-20** below. The City does not currently distribute or provide supplemental treatment to wholesale recycled water and does not plan to do so in the future.

TABLE 3-20: RETAIL RECYCLED WATER SUPPLY

Use Type	General Description	2025	2030	2035	2040	2045	2050
Industrial Use	SPA Cogen Facility	331	1,000	1,000	1,000	1,000	1,000
Note: Values are in acre-feet (AF).							

3.4.2. Desalinated Water

The UWMP requires discussion of opportunities for the development of desalinated water.⁷³

The City is not pursuing desalinated water or brackish groundwater development because no seawater or brackish groundwater sources are available in the area.

3.4.3. Purchased or Imported Water

Although not typical, the City does occasionally import water. For example, as part of its conjunctive use program, the City participates in groundwater substitution transfers. In 2022, a regional coalition, consisting of the City of Sacramento, Carmichael WD, Citrus Heights WD, Fair Oaks WD, San Juan WD, Sacramento Suburban WD, and Sacramento County Water Agency, reduced surface water diversions in lieu of utilizing locally banked groundwater. This surface water was left in stream to provide critical water needs to south-of-delta State Water Project Contractors.⁷⁴

- Water Right Permit 11360 (Application 12622) of the City, transferred up to 5,183 acre-feet of water to Santa Clara Valley Water District and various other State Water Contractors.
- Water Right Permit 11359 (Application 12621) of the City, transferred up to 5,183 acre-feet of water to Santa Clara Valley Water District and various other State Water Contractors.

The regional effort transferred approximately 16,000 acre-feet from July 1, 2022 to November 30, 2022 from the Sacramento region to State Water Contractors that were at risk of experiencing water shortages in 2022.

A separate Conjunctive Use agreement between the City, SSWD, and SCWA accompanied the aforementioned transfer. Under that agreement, the City received groundwater from SSWD and SCWA during the transfer window through existing interties to satisfy City water demands. These volumes of groundwater provided a credit for water to be returned to SSWD and SCWA to allow those agencies to reduce groundwater pumping for aquifer recharge.

The City's conjunctive use program includes a similar arrangement with SSWD and SCWA during ARTESIAN Call Years in which those two agencies provide the City groundwater in lieu of diverting surface water to meet City demands. The ARTESIAN agreement is discussed in more detail in Chapter 2.

⁷³ *Water Code Section 10631(g)*

⁷⁴ Resolution No. 2022-0160. Sacramento City Council, dated 31 May 2022.

3.5. Water Quality

Water quality for both groundwater and surface water supplies is reported annually in the City's Consumer Confidence Report (CCR), which is available on the City's website. As documented in the CCR, the City's drinking water consistently meets or exceeds all federal and state drinking water standards.

The City maintains a proactive approach to protecting water quality and addressing potential constraints on its water supply sources. The City's Water Quality Laboratory and Research and Development Section conducts ongoing water quality evaluations and studies to assess and respond to changing conditions, including those related to drought, climate variability, and watershed influences. The City also participates in source water protection programs that help safeguard the quality of supplies from the American and Sacramento Rivers through both local and regional efforts.

Water quality in the Sacramento and American Rivers can be influenced by a variety of watershed conditions, including storm events, reservoir releases, irrigated agriculture, livestock activities, urban runoff, recreation, forest fire runoff, and point source discharges. These factors can affect source water characteristics such as turbidity, coliform bacteria, Giardia and Cryptosporidium, organic carbon, volatile and semi-volatile organic compounds, and metals including aluminum, iron, and manganese. The City routinely monitors both raw and treated water quality, and the water treatment plants are designed and operated to reliably produce drinking water that meets all applicable regulatory standards. In addition, the Sacramento and American River Watershed Sanitary Surveys, which are updated every five years, confirm that the City's treatment facilities are capable of treating source water to meet all regulatory requirements. As a result, source water quality is not expected to limit the reliability of the City's surface water supplies.

Groundwater underlying the City's service area generally meets primary and secondary drinking water standards for municipal use and is typically characterized as a calcium-magnesium-bicarbonate type water with minor fractions of sodium-magnesium-bicarbonate water, as described in the Department of Water Resources Bulletin 118. While groundwater quality is generally good, conditions vary across the basin depending on location and aquifer depth.

Several regional groundwater contamination sites are located within the broader Sacramento area and in the vicinity of some City wells. The primary sources of larger contaminant plumes include the former Southern Pacific and Union Pacific Railyards, the former McClellan Air Force Base, the former Mather Air Force Base, and the Aerojet Superfund Site in Rancho Cordova. Contaminants associated with these sites include benzene, methyl

tert-butyl ether (MTBE), trichloroethene (TCE), tetrachloroethene (PCE), cis-1,2-dichloroethene (DCE), 1,4-dioxane, 1,2-dichloroethane, carbon tetrachloride, perchlorate, and N-nitrosodimethylamine (NDMA). With the exception of PFAS, additional localized areas of contamination also occur throughout the basin, generally at smaller scales.

The City conducts routine groundwater monitoring to track water quality conditions in both existing and newly constructed wells. As wells are rehabilitated or returned to service, some areas have shown elevated concentrations that are managed through operational monitoring and treatment considerations.

In addition to existing water quality conditions, groundwater supplies may be affected by future regulatory requirements. Potential future regulations related to constituents such as radon could influence groundwater supply availability or treatment requirements. The City participates in regional groundwater management and technical working groups to help develop strategies that protect and sustainably manage groundwater resources in the Sacramento area.

The City will continue to regularly monitor groundwater quality and proactively address regulatory changes to minimize potential impacts on groundwater supply reliability.

The City is engaging in recycled water activities in collaboration with SASD, although plans to expand this system are currently undetermined. Based on current planning and treatment design standards, the City may need to contend with PFAS as a water quality constraint prior to future expansion. Recycled water activities and potential use expansion are described in Section 3.4.

3.6. Water Supply Portfolio Assessment

The City of Sacramento holds a diverse portfolio of water supplies and entitlements, including the pre-1914 appropriative right and appropriative permit on the Sacramento River, and the four permits on the American River. Though the City's permit supplies are subject to hydrologic conditions and flow criteria embedded in the water rights, storage operations on the Sacramento and American Rivers provide a layer of reliability. As such, water supplies up to the maximum diversion amounts and rates listed in the USBR Operating Contract are considered reliable in all year types. As such, **Table 3-21** and **Table 3-22** display the combined contract amount provided for in Operating Contract.⁷⁵

⁷⁵ The City recognizes that climate variability, diversion restrictions that are embedded in the City's water rights permits, among other variables, introduce uncertainty into long-term seasonal water availability.

TABLE 3-21: SURFACE WATER SUPPLY AVAILABILITY IN VARYING YEAR TYPES THROUGH 2030 (ACRE-FEET)

Year Type		Sacramento River	American River	Total
Normal		81,800	228,000	309,800
Single Dry-Year		81,800	228,000	309,800
Multi-Year Drought	2026	81,800	231,500	313,300
	2027	81,800	235,000	316,800
	2028	81,800	238,500	320,300
	2029	81,800	242,000	323,800
	2030	81,800	245,000	326,800

TABLE 3-22: FUTURE PROJECTED TOTAL SURFACE WATER SUPPLY AVAILABILITY THROUGH 2050 (ACRE-FEET)

Year Type		Sacramento River	American River	Total
Normal		81,800	245,000	326,800
Single Dry-Year		81,800	245,000	326,800
Multi-Year Drought	2030	81,800	245,000	326,800
	2035	81,800	245,000	326,800
	2040	81,800	245,000	326,800
	2045	81,800	245,000	326,800
	2050	81,800	245,000	326,800

3.7. Watershed Resilience

The water supply availability tables presented in this chapter characterize the City of Sacramento’s entitlements and projected supply volumes under normal, single-dry-year, and five-consecutive-dry-year conditions. Those tables necessarily present supply data on an annual basis by source category. However, a static presentation of volumes does not fully convey the operational and strategic considerations that govern how the City manages its multi-watershed portfolio over time. This section provides context for interpreting the supply availability data by describing the City’s Climate Adaptation and Watershed Resilience strategy, the physical and regulatory risks that drive it, and the critical long-term asset preservation rationale that underlies the City’s approach to water rights stewardship well beyond the UWMP horizon of 2050.

3.7.1. Climate Adaptation

When evaluating long-term water supply reliability, the City considers extreme hydrologic conditions within the broader context of a changing climate, evolving regulatory and environmental requirements, and the state’s reasonable use doctrine and public trust obligations.⁷⁶ Climate change is altering the fundamental sources of the City’s surface water supplies, specifically the precipitation type and amount, runoff patterns, and soil moisture content within the American River watershed. Warming is a consistent signal across future climate scenarios, directly affecting whether precipitation falls as rain or snow and accelerating snowmelt timing. These changes reduce the effectiveness of snowpack as natural storage and shift runoff to occur earlier in the year, increasing operational constraints during flood control periods during the winter. Supply availability is also reduced as a result of warming during spring and summer when urban, agricultural, and environmental demands are the highest.

Figure 3–7 shows the projected percent change in basin average annual precipitation relative to baseline conditions across three future time periods. Climate projection data were obtained from Appendix B of the American River Basin Study and represent basin wide averages for the entire American River Basin Study area as defined in the ARBS.⁷⁷ Colored lines represent five climate scenarios developed for the American River Basin Study (ARBS): Central Tendency (CT), Hot Dry (HD), Hot Wet (HW), Warm Dry (WD), and Warm Wet (WW). The dashed grey line indicates baseline (0 percent change) conditions.

⁷⁶ California Constitution: Article X, Water Section 2

⁷⁷ Bureau of Reclamation. *American River Basin Study*, Appendix B, Table 3, “Differences in basin-average annual precipitation and temperature between baseline and future climate scenarios over the ARBS study area.”

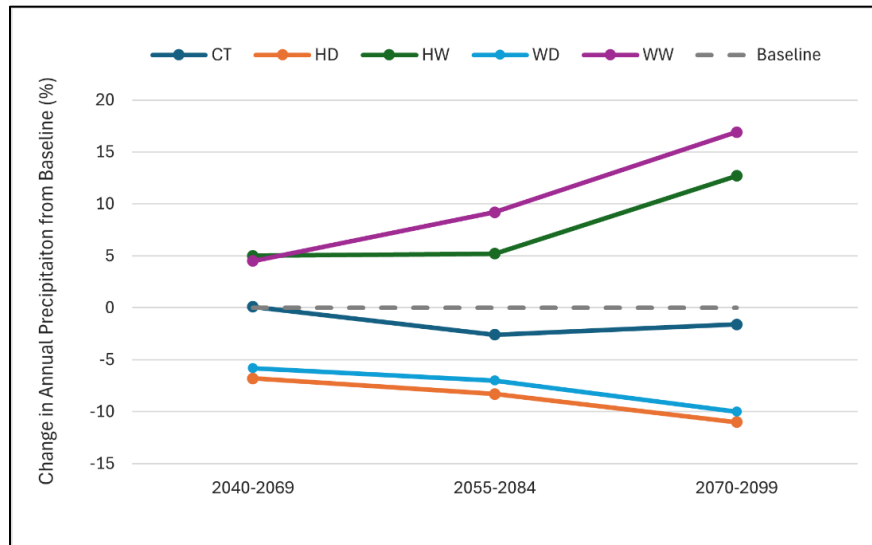


FIGURE 3-7: IMPACTS OF CLIMATE CHANGE ON THE AMERICAN RIVER BASIN STUDY AREA

Precipitation projections for the Sacramento region remain uncertain, with climate models showing a wide range of possible futures, from wetter to drier conditions. However, both the American River Basin Study and state climate assessments indicate increased hydrologic variability and more extreme swings between drought and flood conditions.⁷⁸ Seasonal shifts toward more winter rainfall and reduced spring snowpack exacerbate flood risk while also impacting supply reliability. The City’s Climate Action & Adaptation Plan (CAAP) recognizes that these temperature-driven changes, combined with higher evapotranspiration and water demand during hotter conditions, introduce risks to water quantity and quality, system operations, and infrastructure reliability.⁷⁹ In response, the City evaluates its water supplies over an extended planning horizon beyond 2050 to better reflect future climate conditions, regulatory constraints, and land-use growth. This approach strengthens the usefulness of long-range planning for coordinated decision making.

The City addresses these risks through an intentional focus on climate resiliency and supply redundancy, consistent with their Climate Adaptation and Watershed Resilience platform. Conjunctive-use management, in coordination with the Sacramento Regional Water Bank, offsets the loss of natural snowpack storage by capturing excess wet-season surface water for underground storage and recovery during droughts. Regional initiatives like the DWR Watershed Resilience Pilot with RWA and watershed scale resilience planning further diversify supply portfolios while integrating flood management, ecosystem protection, and upstream

⁷⁸ Bureau of Reclamation *American River Basin Study*, Appendix B

⁷⁹ City of Sacramento Climate Action and Adaptation Plan, Chapter 7

watershed quality.⁸⁰ At the system level, the City is updating critical infrastructure through new raw-water intakes, ozone treatment to address changing river water quality, safer disinfection processes, and transmission improvements designed to maintain operational reliability under changing hydrologic conditions.⁸¹ These actions holistically reflect a proactive adaptation strategy that acknowledges climate change as a structural driver of water supply risk and prioritizes redundancy and long-term reliability for future growth, environmental protection, and regulatory compliance.

3.7.2. Infrastructure and Catastrophic Disruption Planning

In addition to hydrologic and regulatory variability, the City's supply system faces physical risks from infrastructure failure, seismic events, security threats, and other catastrophic disruptions. The City's Sacramento and American Rivers conveyance and treatment systems involve significant infrastructure that, if disrupted, could eliminate access to supply from one or more watershed sources for an extended period. The E.A. Fairbairn Water Treatment Plant and Sacramento River Water Treatment Plant each serve as critical points in the City's surface water delivery system. A failure affecting either facility—or the raw water conveyance infrastructure serving it—would immediately concentrate reliance on the remaining operational source.

The Sacramento region sits within a seismically active zone, and portions of the City's service area and conveyance infrastructure are within or adjacent to 100-year and 200-year floodplain areas. The operation of Folsom Dam and the Sacramento Weir bypass system directly affect water availability and flood management for City facilities. The City also relies on SMUD's UARP infrastructure to provide conveyance and re-diversion from storage across watersheds. Critical Infrastructure failure scenarios are, by definition, unpredictable in timing and magnitude. Prudent municipal water supply management requires that the City maintain access to supply alternatives across multiple watersheds, so that no single point of infrastructure failure eliminates the City's ability to serve its customers.

The City's groundwater system provides an additional layer of supply redundancy that operates independently of surface water infrastructure. However, groundwater alone is insufficient to meet peak demands under the City's current and projected service area, and its role is most effective as a conjunctive-use buffer rather than a primary supply source.

⁸⁰ <https://rwawatershedsresilience.com/>

⁸¹ Water+ Treatment Plants Resiliency and Improvements Project Final Draft Environmental Impact Report, Chapter 1.2: Summary of Proposed Project

The City's strategy is to ensure that each water asset in its portfolio retains its full operational value as an emergency, redundancy, and long-term reliability resource, even in years when operational conditions favor concentration of diversions in another watershed.

3.7.3. Bay Delta Plan

The Bay-Delta Water Quality Control Plan Update (Plan) is a pending State Water Resources Control Board (State Board) action that could impact water supplies that connect to the Sacramento-San Joaquin Bay Delta (Delta). Although the Plan has not yet been adopted, the various proposed State Board actions could affect each urban water purveyor's water supply reliability. The Healthy Rivers and Landscapes Program is an alternative to the Plan and provides opportunities for urban purveyors to meet the Plan's aquatic species and water quality objectives through coordinated regional management activities. In addition, the Plan has numerous post-adoption water management activities, such as cold-water storage and management, that are to-be-determined as the Plan is implemented. These to-be-determined management actions could impact how water supplies are made available to each urban purveyor. Finally, the Plan appears to exempt some tributaries and other geographical areas from strict adherence to the Plan or HRL Program that would not affect long-term urban water planning projections.

The water supply reliability projections described in this Urban Water Management Plan update reflect characterizations of water supplies and demands as they exist based upon reasonably available information. Although the Plan, HRL Program, and post-Plan water management adjustments could change UWMP water supply reliability projections, the water supply implications are not yet suitable for analytical integration into the current water supply reliability projections for this UWMP iteration. Once the Plan or HRL Program is adopted, and post-adoption implementation actions become better known, the projections for urban water supply reliability can be reasonably calculated. It is anticipated that the 2027 through 2030 iterations of Annual Assessments will guide urban purveyors in assessing near term impacts of the Plan on water supply reliability and generate useful information that can be incorporated into the next UWMP update in 2030.

Chapter 4

Water Use

Developing a thorough understanding of water use enables the City to reliably and cost-effectively manage its water supplies to continue to meet customer needs. This chapter characterizes the City's current and forecasted customer water needs and examines how various factors such as seasons, current and projected land use, wholesale demands, and differing hydrologic conditions impact water use. The assessment also factors in anticipated growth, evolving customer water use behaviors, a changing regulatory environment, and climate adaptation. After analyzing each water use sector individually, the City aggregates this information into a comprehensive customer water use projection. This projection forms the foundation for integration with the City's water supplies (see Chapter 3) and for evaluating long-term water system reliability (see Chapter 5).

As discussed previously in this plan, there have been no legislative changes to the UWMPA since the adoption of the City's 2020 UWMP, however updates to annual water use reporting have been implemented. These include Urban Water Use Objective (UWUO) reports, and monthly drought and conservation reporting to the Safe and Affordable Funding for Equity and Resilience (SAFER) portal that are consolidated annually into an auto-generated Clearinghouse Annual Inventory Report (CAIR).

This Chapter is organized as follows:

Current Retail Customer Water Use – This subsection presents data reflecting the City's residential and non-residential customers for 2021 through 2024 as well as the actual 2025 water use and presents the distribution system losses for this same period.

Wholesale Customer Use – This subsection provides a description of current and projected future wholesale water service within the City's water supplies' place of use.

Compliance with Water Use Targets – This subsection provides an update in context of the 2020 SBX7-7 water use target, along with an overview and compliance with the state's Urban Water Use Objective.

Forecasting Customer Use – These subsections present the derivation and results of future water use forecasts for potable water within the City's service area, including land-use classifications, unit demand factors, and estimation of distribution system

losses. An overview of factors affecting future use along with the variations in customer water use the City should expect during years with low rainfall are also included in this section.

Projecting Disadvantaged Community Water Use – This subsection presents the estimated water use necessary to meet lower income households, pursuant to California Water Code §10631.1.

Long-Range Demand Scenarios – This subsection provides high-level considerations of potential water demands well into the future. These long-term demands are important to consider in the context of the City’s Climate Adaptation and Watershed Resilience framework that is driving water management strategy and long-range planning.

4.1. Retail Customer Water Use

As described in Chapter 2, the City serves potable water to approximately 145,403 customer connections. Since the adoption of the 2020 UWMP, the customer connection count also includes fire service connections. The City has been essentially fully metered as of 2021, with approximately 99.8 percent of connections metered.⁸²

Under normal circumstances, customers are served potable water derived from surface water sources (see Chapter 3) diverted and treated at EAFWTP and SRWTP, and various groundwater sources. Information about the City’s current customers, their recent and expected water use trends, and the City’s ongoing Demand Management Measures (DMMs) targeting these customers (see Chapter 7 for DMMs) ground this UWMP’s water use forecast through 2050 and beyond. Furthermore, annual records of actual water use are the basis for determining the City’s compliance with its urban water use objective, reported annually to the Department of Water Resources beginning in January of 2024. This subsection presents relevant retail water use information.

As both a retailer and a wholesaler, the City’s current water use can be distinguished by retail and wholesale production. This section presents the City’s retail customer use. Wholesale customer use is presented and analyzed in subsection 4.2. The actual retail customer water use data for 2021 through 2024 is shown on **Table 4-1**, whereas the retail customer water use data for 2025 is shown on **Table 4-2**.

⁸² City of Sacramento, Water Master Plan Update, January 2023 (West Yost.), at p. 2-15.

4.1.1. Retail Customer Water Use: 2021 to 2024

Recent customer water use data can help the City understand water use trends, effects of the most recent prolonged drought and recovery from any drought impacts, effects of long-term demand management measures, and other pertinent water use factors relevant to its forecast of future water use. Additionally, the City is required to quantify past customer water use pursuant to Water Code Section 10631(d)(1). As mandated by the state, this monthly water use information is also reported as part of the City's SAFER reporting, in their Annual Assessments, and to demonstrate compliance with UWUO.

Table 4-1 presents the City's past customer potable water use by customer classification for 2021 through 2024 in acre-feet. The City records potable water use within five different categories:

- Single-Family Residential
- Multi-Family Residential
- Commercial/Industrial/Institutional
- Landscape Irrigation
- Other

These classifications reflect the delivery categories in the City's initial eAR reporting, which presents the City's commercial, industrial, institutional, and water demands as a single, combined "CII" demand. The "Other" category represents a range of small, non-standard uses such as hydrant flushing and street sweeping. The City does not provide non-potable supplies to retail customers.

Included within the City's retail CII and Landscape Irrigation categories are deliveries made to Natomas Unified School District, a small, relatively new wholesale customer. Due to a metering error, these deliveries were included within the City's retail metering. Deliveries to this service area represent less than 0.05% of the annual CII and Landscape Irrigation totals but are presented independently in section 4.2.2 to avoid double-counting deliveries made to this service area.

TABLE 4-1: RETAIL POTABLE CUSTOMER USE (2021-2024)

	Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Single-Family Residential	2021	2,412	2,142	2,154	3,176	4,072	4,919	5,094	4,717	4,652	3,916	2,498	2,096	41,850
	2022	2,008	2,080	2,507	2,859	2,968	4,068	4,381	4,578	4,209	3,476	2,787	2,208	38,129
	2023	2,334	2,032	2,133	2,343	3,300	4,410	5,264	5,375	5,016	4,038	3,439	2,658	42,341
	2024	1,943	1,929	1,874	2,244	2,663	4,288	4,724	4,760	4,516	3,866	3,020	2,061	37,890
Multi-Family Residential	2021	816	727	724	1,068	1,501	1,666	1,792	1,832	1,832	1,642	1,114	893	15,608
	2022	872	875	954	1,102	1,026	1,292	1,387	1,453	1,437	1,240	1,063	943	13,645
	2023	1,060	942	989	1,049	1,199	1,489	1,715	1,728	1,746	1,455	1,376	1,171	15,920
	2024	856	884	863	992	1,094	1,446	1,556	1,655	1,643	1,414	1,197	940	14,541
Commercial/Industrial/Institutional	2021	1,123	1,022	1,163	1,556	2,179	2,507	2,750	2,630	2,612	2,139	1,323	1,108	22,111
	2022	1,116	1,106	1,438	1,547	1,652	2,068	2,139	2,317	2,260	1,875	1,466	1,233	20,216
	2023	1,434	1,182	1,183	1,311	1,674	2,058	2,494	2,681	2,517	2,057	1,728	1,377	21,698
	2024	981	988	1,119	1,292	983	2,361	2,335	1,829	2,420	2,096	1,621	885	18,911
Landscape Irrigation	2021	101	95	95	163	267	350	365	338	344	282	141	92	2,633
	2022	54	91	221	282	349	625	731	778	722	484	267	96	4,701
	2023	93	76	86	115	391	732	974	1,071	1,028	675	388	120	5,748
	2024	221	205	39	77	521	544	682	1,385	735	537	246	360	5,554
Other	2021	31	25	28	49	64	77	101	80	77	68	34	25	657
	2022	14	20	24	31	44	68	102	109	92	59	32	23	617
	2023	16	18	16	22	48	108	105	103	129	86	47	21	720
	2024	13	21	21	31	48	87	105	114	119	87	43	17	707
Total Metered Deliveries	2021	4,484	4,011	4,164	6,012	8,083	9,520	10,103	9,596	9,517	8,047	5,110	4,214	82,860
	2022	4,064	4,172	5,145	5,821	6,039	8,121	8,739	9,235	8,720	7,134	5,615	4,502	77,307
	2023	4,938	4,249	4,406	4,841	6,613	8,797	10,552	10,958	10,437	8,310	6,979	5,347	86,428
	2024	4,013	4,028	3,917	4,637	5,310	8,727	9,402	9,744	9,433	8,000	6,127	4,263	77,602

The historical data illustrates the distribution of water use across customer classifications and highlights notable seasonal variations. For example, water use for landscape irrigation shows a significant increase during summer, with volumes rising from an average of 117 acre-feet in January to over 688 acre-feet on average in July, before declining to a 167-acre-foot average in December. This pattern reflects the higher demand for irrigation during warmer months, while winter rainfall generally meets landscape water needs.

Residential water use also demonstrates this trend. Single-family residential usage consistently accounts for a sizeable portion of the City's annual potable water demand, with summer uses nearly double those of winter. When combined with multi-family residential

use, residential consumption averages just under 70% of the City’s total potable water service. Compared to previous projections, these water use characteristics have remained relatively consistent throughout the last 10 years.

A year-over-year comparison of total metered deliveries highlights the combined impacts of COVID-19 and drought conditions in 2021, when indoor water use was high across all customer categories.

These seasonal fluctuations in response to hydrologic conditions alongside the dominance of residential demand relative to other customer classes provide the City with valuable insight for evaluating the seasonal reliability and resilience of its water supplies. Recognizing that not all historical projections will remain consistent, leveraging these trends enables the City to develop successful water management approaches and water shortage contingency response actions with as customer classes and economic trends change.

4.1.2. Retail Customer Water Use in 2025

Retail customers served by the City are metered at their connection to the City’s potable water distribution system. As of January 1, 2024, for each customer account, the City is required to collect and submit metered delivery values to the State Water Board on a monthly basis, summarized annually in an auto-generated CAIR Report. This data was formerly submitted as part of the City’s annual reporting to the SWRCB Division of Drinking Water and to DWR. Although those reports are still required, requirements shall be modified by the State Board to avoid duplicative reporting.⁸³

The 2025 actual retail customer use presented in **Table 4-2** represents the summarized delivery to all the City’s potable customers. It does not, however, include the distribution system losses inherent in a pressurized water delivery system that occur during the City’s efforts to treat, store and route the water throughout the extensive distribution system to each customer’s connection.

Compared to water use presented in **Table 4-1**, 2025 annual customer use remains generally consistent across all categories. Landscape irrigation was the only category exhibiting a noticeable increase, showing 1,104 acre-feet increase in 2025 from 2024, although the total use was about the same between the two years.

⁸³ The annual SWRCB report is referred to as the ‘electronic Annual Report’ or eAR, and the annual DWR report is known as the Public Water System Statistics report.

TABLE 4-2: POTABLE CUSTOMER WATER USE: 2025 ACTUAL USE (VALUES IN ACRE-FEET)

Use Category	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Single-Family Residential	2,167	1,992	1,963	2,384	3,482	4,019	4,711	4,555	4,549	3,477	2,572	2,010	37,880
Multi-family Residential	1,040	961	947	1,014	1,283	1,365	1,563	1,560	1,560	1,330	1,106	941	14,671
Commercial/Institutional	1,108	848	1,032	1,235	1,718	1,945	1,616	2,198	2,198	1,770	1,295	1,056	18,018
Landscape Irrigation	106	307	105	157	489	771	1,579	981	981	841	243	100	6,658
Other	15	14	14	21	68	95	102	106	0	68	30	13	546
Total	4,436	4,122	4,062	4,810	7,041	8,195	9,570	9,399	9,287	7,486	5,246	4,120	77,774

4.1.3. Existing Distribution System Losses

Distribution system water losses (also known as “real losses”) are the physical water losses from the City’s water distribution system up to the point of delivery to the customer’s system (i.e., up to the residential water meter).

Since 2016, the City has been required to quantify its distribution system losses using the American Water Works Association (AWWA) Method.⁸⁴ An electronic copy of the audit in Excel format is to be submitted to the DWR by October 1 of each year for the prior year’s estimated system losses, using DWR’s online submittal tool pursuant to Code of Regulations Section 638.5. Although the AWWA-based audit remains in effect as the primary tool for monitoring distribution system losses, mandated water loss reductions are on the horizon with the SWRCB’s April 1, 2023 adoption of volumetric water loss performance standards. Pursuant to California Code of Regulations, Section 966, the SWRCB will require suppliers to reduce real loss by January 1, 2028 to no greater than the real water loss standard calculated in its 2027 audit.⁸⁵ After 2028, the City shall assess compliance every three years as an average of recent real losses. Additionally, the City will be required to evaluate apparent losses and submit an inventory of apparent losses should average losses exceed the real water loss standard.

As discussed below in Section 4.2.2, a new water use efficiency framework established as part of Senate Bill 606 and Assembly Bill 1668 directly integrates “aggregate estimated efficient water losses” as a component. Importantly, because water loss is subject to enforcement under Section 10608.34, SWRCB will not issue enforcement orders under the Urban Water Use Objectives solely based on exceedances due to water loss.

⁸⁴ Title 23 California Code of Regulations Section 638.1 et seq.

⁸⁵ CCR, Title 23, § 966, Urban Water Use Objectives.

Pursuant to DWR’s 2025 recommendations, these distribution system losses are losses reported as part of DWR’s Water Loss Audit Program.⁸⁶ Due to the time lag associated with AWWA reporting, the 2025 estimate for the City has not been officially submitted to DWR as of the drafting of this UWMP.

As can be anticipated given the dynamic functions of a pressurized potable water distribution system, the estimated annual distribution system loss as a percentage of water entering the system will vary year-to-year and month to month. Over the last five years, however, the City has consistently reported loss values at or below their water loss standard. To maintain a conservative planning approach and accommodate potential data fluctuations in the future, system losses are assumed to be 10% when projecting water demand through 2050.

4.1.4. Water Loss Control Standard

The CWC §10608.34 required the State Water Resources Control Board to develop water loss control and performance standards (Real Water Loss Standards) applicable to urban retail water suppliers. The Real Water Loss Standard for the City was developed using information submitted as part of the City’s annual water loss reporting to the State, specifically for the period 2017 through 2020. The resulting Real Water Loss Standard is 41.1 gallons per (active and inactive) service connection per day. The resulting Real Water Loss Standard as an average percent of total water supplied during this timeframe is 8.2%. Using the information from the same period, the average “apparent” water loss averaged 2.0% (of total water supplied). Apparent water loss refers to non-physical water losses, part of the AWWA “non-revenue water” category, that encompasses meter inaccuracies, data errors, and unauthorized consumption. Combining these real and apparent water loss as a percentage of total water supplied gives a total of 10.2%. As previously mentioned, the City will use a 10% distribution system water loss factor when forecasting future water use.

4.2. Wholesale Customer Water Use

In addition to serving retail customers, the City also wholesales water and provides wheeling services to other agencies. On average, approximately 85 percent of the City’s water use served retail customers, and 15 percent was wholesaled to California American Water Company, Sacramento Suburban Water District, and SCWA’s Sacramento International Airport/Metro Air Park, or wheeled for SCWA’s Zone 40. Wholesale and wheeling deliveries are

⁸⁶ See the City of Sacramento Department of Utilities AWWA Worksheet, submitted annually to DWR’s WUEdata – Water Audit Report Data ([WUEdata – Water Audit Plans](#)).

made through metered turnouts connected to the City’s existing distribution infrastructure. The City also has unmetered emergency interconnections with neighboring agencies.

As previously shown in **Figure 2-5**, the City’s Place of Use (POU) for wholesale water extends beyond that of retail deliveries. Water delivered to areas outside the City boundary align with the delivery locations assigned to each surface and groundwater supply. Some additional water supplies may be available for use in these areas in the future.

4.2.1. Wholesale Customer Water Use: 2021 to 2025

Recent wholesale deliveries to the City’s current wholesale customers between 2021 and 2025 are summarized in this section and shown in **Table 4-3**. Cal-Am received a combined total of 2,203 AFY across five service area turnouts, just under half of the combined 4,831 AFY contracted capacity. SCWA received 3,824 AFY of water at the Laguna/Vineyard (Zone 40) and International Airport/Zone 50 Metro Air Park turnouts. SSWD received deliveries through their Northrop Drive turnout, representing approximately one third of their contracted 22,400 AFY South Service Area capacity. Since 2020, between 16 and 33 acre-feet of water was delivered to Natomas Unified School District annually, representing less than half of the 69 AF of annual deliveries projected in the 2020 UWMP. As previously discussed, deliveries to this wholesale service area were grouped into the City’s retail deliveries, presented in **Table 4-1** and **Table 4-2**.

Actual water use by the City’s wholesale customers between 2021 and 2025 is summarized in **Table 4-3**, classified both by purveyor and turnout location. Annual deliveries made to NUSD are also shown but are not included in the wholesale totals to avoid double-counting.

TABLE 4-3: WHOLESALE POTABLE CUSTOMER WATER DELIVERIES (ACRE-FEET)

	Year	2021	2022	2023	2024	2025
Cal-Am	Cal-Am Arden	11	11	8	3	6
	Cal-Am Fruitridge Vista (47th)	120	86	9	6	42
	Cal-Am Fruitridge Vista (Sampson)	494	211	190	152	419
	Cal-Am Parkway	676	377	660	722	1,074
	Cal-Am Suburban (Folsom)	629	333	495	654	661
	Cal-Am Rosemont	-	-	-	-	-
SCWA	SCWA Zone 40 Laguna/Vineyard	1,772	-	-	2,616	2,927
	SCWA International Airport/ Zone 50 Metro Air Park	816	759	755	826	896
SSWD	SSWD Sac Suburban (Northrop)	-	-	7,472	6,124	7,280
NUSD	Natomas Unified School District	33	22	26	33	16
Totals		4,518	1,777	9,589	11,102	13,306

Existing Wholesale Losses

The City uses the same system to distribute water to retail and wholesale customers. Losses associated with the City’s wholesale water service are essentially accounted for in its retail distribution system losses, discussed in Section 4.1.3. Furthermore, water usage and the associated losses inherent with any pressurized distribution system are reported in the individual plans of the City’s wholesale and wheeling customers.

4.3. Compliance with Water Use Targets and Objectives

This section examines the City’s derivation of and compliance with state-mandated water use targets and objectives. The Water Conservation Act of 2009, also known as SB X7-7, introduced water conservation targets that served as a valuable measure of progress through 2020. Water use efficiency regulations have since been updated and refined by Senate Bill 606 and Assembly Bill 1668, guiding the calculation of “urban water use objectives”, as well as the City’s annual reporting on these objectives starting in 2023.

4.3.1. Compliance with 2020 Urban Water Use Target

SB X7-7, also known as the Water Conservation Act of 2009, introduced sustainable water use and demand reduction legislation requiring the City to make incremental progress in reducing per-capita water use. Specifically, urban water retailers were tasked with achieving a 10% reduction in per capita water use by December 31, 2015, and a 20% reduction by December 31, 2020. Beyond 2020, although reporting on compliance is no longer required, this target remains valuable as a baseline for the City to measure progress on achieving water efficiency goals.

The City's 2015 GPCD interim target was established in the 2015 UWMP as 253 GPCD, whereas the City's actual retail per capita water use in 2015 was 158, demonstrating compliance with this target. In 2020, the City's 2020 final water use target was calculated to be 225 gpcd.⁸⁷ The City's calculation of their 2020 actual GPCD used the following methodology:

Gross water, defined as the total potable water leaving the City's water treatment plant, represents both the customer deliveries and the distribution system losses. This value is divided by the City's estimated population in 2020 and resulted in a compliance value of 169 GPCD.

Because this value was less than the City's 225-gpcd target, the City was determined to be in compliance with CWC Section 10608.24(b).

Although not required by the Act, in 2025, the City had an actual GPCD of 159, calculated using the same methodology presented above. Moving forward, the City is required to maintain compliance with its 2020 GPCD target for urban water management planning purposes.

4.3.2. Urban Water Use Objective Compliance

In 2018, the California Legislature passed Senate Bill 606 and Assembly Bill 1668, directing the SWRCB to adopt standards to encourage more efficient urban water use. This legislation, known as "Making Conservation a California Way of Life," was adopted in 2024, establishing individualized Urban Water Use Objectives for each urban retail water supplier. In contrast to the SB X7-7 per-capita targets, this legislation functions as a water budget tailored to a supplier's service area, considering residential indoor use, residential and commercial outdoor use based on local evapotranspiration and irrigable landscape area, water loss, and bonus incentives for potable reuse. In addition to the volumetric UWUO, the regulation

⁸⁷ Derived from the City of Sacramento's Water Master Plan Update, adopted in January 2023, prepared by West Yost

establishes performance measures for commercial, industrial, and institutional (CII) sectors. The standards become progressively more stringent through 2040. Compliance with efficiency-based UWUOs aligns with both the City's Demand Management Measures detailed in Chapter 7 and the adaptive management strategies outlined in the City's Water Shortage Contingency Plan (WSCP) in Chapter 6.

In each of the first three reporting years, the City submitted required annual reports to the SWRCB demonstrating that actual water use remained below its calculated UWUO, confirming compliance in 2023, 2024, and 2025.

4.4. Forecasting Retail Customer Water Use

Current water use, including existing retail customer demands and trends, provides the basis for forecasting future demands. Growth and development represent an additional set of demands that will augment total projected water use. Demand factors that will influence future water use of both existing and new customers are then incorporated into the methodology to determine future demands across the planning period.

Pursuant to California Water Code 10610.4(c), an urban water supplier *"shall be required to develop water management plans to actively pursue the efficient use of available supplies."* As such, the future water use projections for both existing customers and those added over the 25-year planning horizon should reflect the "efficient use" of water.

An important effort related to the City's customer water use and preparation of the City's 2025 UWMP, is the City's Water Master Plan Update, adopted in January of 2023 (2023 WMP).⁸⁸ The 2023 WMP provides vetted demand projections, based upon future development estimates and unit water use factors refined based on recent, post-drought water use trends as well as water use efficiency and water conservation efforts. These projections also account for a future drought rebound factor and are incorporated into the 2025 UWMP forecast.

4.4.1. Existing and Future Retail Demand Projection Methodology

Forecasting future water use requires a thorough analysis of existing retail customer demands, as this representative water use serves as the foundation for estimating the future needs of these existing customers.

Aside from existing customers, the main factor influencing future retail customer water use is future growth. The 2023 WMP anticipated growth to occur within both Opportunity Areas and non-Opportunity Areas, with the latter representing new demands associated with infill

⁸⁸ City of Sacramento Water Master Plan Update, January 2023. West Yost, Project No. 038-60-19-53.

projects and/or previously developed land. To estimate the City's future water demands, the 2023 WMP used a combination of land use data, sourced from the City's 2035 General Plan and 2040 General Plan, as well as unit water use factors developed from historical water use data.

This UWMP also considers developments not previously accounted for in the preparation of the City's 2020 UWMP and 2023 WMP. To provide flexibility and conservative coverage throughout the development process, a blanket water use demand factor is used, calculated using recent water and land use data within the County. Applying this demand factor to the acreage of known developments not previously accounted for in the 2023 WMP, while maintaining previous projections as-is, brings 2023 WMP projections within the City service area up to date. For other areas proposed for development outside of the City limits, this demand factor can be used to assess the City's resources should the City serve additional retail demands or beyond their existing retail service area.

Future water use forecasts for both existing and new retail customers consider ongoing water conservation objectives regulated by the State and implemented by the City, discussed in Section 4.4.2.

Representative Current Retail Water Use

As mandated by the state, actual monthly retail customer water use data presented on **Table 4-1** and **4-2** is also reported as part of the City's SAFER reporting, in their Annual Assessments, and to demonstrate compliance with UWUO. Using this information, a representative "current" water use by existing customers can be estimated. Developing this estimate requires acknowledging how and why actual use varies slightly year-to-year. This estimate is influenced by a variety of factors, from the timing of spring rain events impacting when landscape irrigation may begin to how the City's population adjusted throughout the course of the Covid-19 pandemic. In addition to accounting for some of these variations, the City also has a desire to conservatively assure long-term water system reliability, as described in Chapter 5.

For this UWMP, the City's actual retail customer water use for 2021 was used to represent current conditions; incorporating water use during times of drought provides a conservative baseline and represents anticipated future climate conditions throughout the planning horizon.

Table 4-4 provides the representative monthly and annual current potable retail water use, not including distribution system losses.

TABLE 4-4: REPRESENTATIVE CURRENT WATER USE FROM 2021 (ACRE-FEET)

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
4,484	4,011	4,164	6,012	8,083	9,520	10,103	9,596	9,517	8,047	5,110	4,214	82,860

4.4.2. Factors Affecting Future Customer Use

There are multiple factors that affect the forecasted future customer use, including state and local landscape regulations, building code requirements, water-use mandates, new housing developments, and existing water conservation programs. These factors are incorporated into determining appropriate per-dwelling unit or per customer connection water demand values for use in forecasting future water needs. Relevant characteristics of the factors are described here.

Water Conservation Objectives

In response to multi-year drought conditions, Governor Brown issued Executive Order B-37-16 entitled “Making Water Conservation a California Way of Life.” In May 2018, when Governor Brown signed SB 606 and AB 1668 into law, additional statutory requirements were imposed above and beyond the 20 percent by 2020 target reflected in the 2009 legislation. The City met this mandated target. As described in section 4.3.2, to demonstrate compliance with its Urban Water Use Objective, efforts to increase water use efficiency and ultimately to reduce water demands of existing and future water users are and will continue to be of high priority to the City.

The City’s approach to water conservation is also closely tied to their 2025 Water Efficiency and Conservation Plan, which presents a long-term framework designed to guide responsible water use management through 2055.⁸⁹ Objectives of this plan are to increase customer participation in water-saving programs, enhance existing rebate and outreach initiatives, and implement new measures developed in coordination with the Regional Water Authority and Sacramento Water Forum. These initiatives, discussed further in Chapter 7 and Appendix C, are designed to be adaptable as regulatory requirements and climate conditions evolve. The City’s existing and planned conservation objectives are anticipated to exert continued downward pressure on per-capita water use over the planning period, an important consideration in forecasting future customer use as the service area population increases.

⁸⁹ City of Sacramento Water Efficiency and Conservation Plan, Maddaus Water Management, Inc., November 2025.

Requirements in California Building Code

Beginning in January 2010, the California Building Standards Commission adopted the statewide mandatory Green Building Standards Code (hereafter the “CAL Green Code”) requiring the installation of water-efficient indoor and outdoor infrastructure for all new projects after January 1, 2011. The CAL Green Code was incorporated as Part 11 into Title 24 of the California Code of Regulations and was updated in 2016, 2019, and 2022. Revisions to the CAL Green Code in 2019 modified sections to direct users to MWELO regulations contained in other regulatory sections.⁹⁰

The CAL Green Code applies to the planning, design, operation, construction, use and occupancy of every newly constructed or remodeled building or structure. All new residential and non-residential customers must meet the water use requirements of the CAL Green Code as well as the outdoor requirements described by MWELO.

The CAL Green Code’s indoor requirements generally manifest through: (1) installation of plumbing fixtures and fittings that meet the 20 percent reduced flow rate specified in the CAL Green Code, or (2) by demonstrating a 20 percent reduction in water use from the building “water use baseline.”⁹¹ The Proposed Project will satisfy these indoor requirements through the use of appliances and fixtures such as high-efficiency toilets, faucet aerators, on-demand water heaters, or other fixtures, as well as Energy Star and California Energy Commission-approved appliances. Outdoor requirements are discussed in the following subsection.

California Model Water Efficient Landscape Ordinance and City Ordinance

DWR’s Model Water Efficient Landscape Ordinance (MWELO) governs new development and retrofitted landscape water efficiency standards. All retail water suppliers or counties are required to adopt the MWELO or enact their own provisions that are equal to or more restrictive than the MWELO provisions.⁹² The City’s Water Efficient Landscape Ordinance implements the State’s MWELO through locally codified requirements. The most recent MWELO

⁹⁰ The 2019 updated sections to direct CAL Green code users to Title 23 of the California Code of Regulations to allow Title 23 to be the sole location of MWELO requirements.

⁹¹ See CAL Green Code. For Residential construction, Section 4.303.1 provides the residential water conservation standard and Table 4.303.2 identifies the infrastructure requirements to meet this standard. Table 4.303.1 and Worksheets WS-1 and WS-2 are to be used in calculating the baseline and the reduced water use if Option 2 is selected. For non-residential construction, Section 5.303.2.3 provides the water conservation standard as well as the baseline and reduced flow rate infrastructure standards. Note that Worksheets WS-1 and WS-2 incorporate both residential and non-residential fixtures, yet the water use is still to be analyzed by “building or structure” as specified in Chapter 1, Section 101.3.

⁹² Sacramento City Code § 15.92, “Water Efficient Landscape Requirements,” Sacramento, CA, accessed February 25, 2026, https://codelibrary.amlegal.com/codes/sacramentoca/latest/sacramento_ca/0-0-0-29495

update in January of 2025 repealed several sections and added a distinction in compliance options for new construction projects between 500 and 2,500 square feet of landscape area and those with 2,500 square feet or more of landscape area.⁹³

The MWELo provides a methodology to calculate total water use based upon a given plant factor and irrigation efficiency or sets forth the Maximum Applied Water Allowance (“MAWA”) formula to use if project landscaping details are lacking. Additionally, if using the plant factor basis, the MWELo requires the landscape design plan to delineate hydrozones (based upon plant factors) and then to assign a unique water use value for each hydrozone (low, medium, high).⁹⁴

Prohibition on Non-Functional Turf

In 2023, the Legislature determined that the use of treated, potable drinking water for irrigating decorative or aesthetic landscaping that serves no recreational or public use is inefficient and inconsistent with state water conservation and climate resilience objectives.⁹⁵ Under CWC §10608.12(m), “nonfunctional turf” (NFT) is defined as “a ground cover surface of turf located in a recreational use area or community space. Turf enclosed by fencing or other barriers to permanently preclude human access for recreation or assembly is not functional turf”. This definition explicitly excludes cemeteries, parks, sports fields, and lawns that are regularly used for recreation or community gathering.⁹⁶

The prohibition on NFT applies primarily to commercial, industrial, institutional, and municipal properties, as well as common areas maintained by homeowners’ associations and common interest developments.⁹⁷ Potable water may continue to be used to maintain the health of trees and other perennial, non-turf landscaping, and where irrigation is necessary to address immediate public health or safety concerns. For example, potable irrigation may be allowed where discontinuation would compromise fire prevention or fuel reduction efforts, dust control, or other measures needed to protect human health and safety.

Implementation of the NFT provisions is phased over several years and may be enforced at the local level by public water systems, cities, and/or counties.⁹⁸ Non-compliance of the NFT

⁹³ CCR Tit. 23, Div. 2, Ch. 2.7, Sec. 491.2

⁹⁴ CCR Tit. 23, Div. 2, Ch. 2.7, Secs. 490.2

⁹⁵ In 2025 provisions of Assembly Bill 1572 were codified into the California Water Code.

⁹⁶ CWC §10608.12

⁹⁷ Per Civil Code §4100, common interest developments are defined as community apartment projects, condominium projects, planned developments, and stock cooperatives.

⁹⁸ CWC §10608.14

provisions may result in civil penalties imposed on property owners, or other locally defined enforcement actions.

Initial compliance begins in 2026, with progressively broader property categories subject to the prohibition through 2030 and beyond, including later deadlines for properties located in disadvantaged communities.⁹⁹ In 2026, public water systems are required to update local ordinances and customer policies to reflect the new restrictions.

The following timeline outlines the dates set forth by the CWC and corresponding requirements:

By January 1, 2027: Public water systems must update local ordinances, regulations, or policies to reflect NFT requirements and must notify customers.

Beginning January 1, 2027: State properties owned or leased by the Department of General Services will no longer be allowed to irrigate NFT with potable water. In addition, all potable irrigation of NFT will be prohibited for local governments, public agencies, public water systems¹⁰⁰, as well as municipal and institutional properties. Revised water systems ordinances and customer communications must be in effect statewide.

Beginning January 1, 2028: All potable irrigation of NFT will be prohibited statewide for all other commercial and industrial properties.

Beginning January 1, 2029: All potable irrigation of NFT will be prohibited for multifamily residential properties, excluding disadvantaged communities. This limitation also applies to common areas of homeowners' associations and similar entities.

June 30, 2030: Commercial, industrial, and institutional property owners with more than 5,000 square feet of irrigated area must begin certifying compliance to the State Water Resources Control Board. Certification is required every three years thereafter (through 2039).

June 30, 2031: Owners of HOA and common-interest development properties with more than 5,000 square feet of irrigated common area must begin certifying compliance. Certification is required every three years thereafter (through 2040).

⁹⁹ Per CWC 10608.12 (I), "disadvantaged community" means a community with an annual median household income that is less than 80 percent of the statewide annual median household income.

¹⁰⁰ Per CWC §10608.14(a)(5), properties owned by public agencies, local governments, and public water systems located in a disadvantaged community have an implementation date beginning January 1, 2031.

Metering, Volumetric Pricing, and Water Budgets

California Water Code section 525 requires water purveyors to install meters on all new service connections after January 1, 1992. California Water Code Section 527 requires water purveyors to charge for water based upon the actual volume of water delivered if a meter has been installed. It is anticipated that the retail billing system will encourage and help maintain reasonable use (e.g., through implementation of a tiered rate structure and/or water budgets), so that individual customer water demands are reasonably not expected to increase over time.

Anticipated Development

Thoroughly assessing the impact of recently completed or to-be-completed developments throughout the planning horizon is an important part of estimating future customer use. The City anticipates progress on multiple residential, industrial, and commercial developments throughout the UWMP planning horizon, previously presented in **Table 2-5**. The increased demands associated with potential developments are accounted for in the City's forecasted demand, analyzed in Section 4.4.4.

Considering the implications of growth on compliance with the requirements of Senate Bill 606 and Assembly Bill 1668, the City is prioritizing conservation and demand-reduction efforts for new developments, such as installing efficient water systems and low water-use landscaping.

Drought Rebound Considerations

Compared to water use during the 2012 through 2016 drought, recent water demands have demonstrated a lower-than-expected rebound from those low figures. This could be due to the success of the City's conservation programs, or the retention of previously adopted demand reduction behaviors. To account for a continued long-term rebound from this time, a 10% rebound factor applied to future demand projections has been maintained from the 2023 WMP. This approach provides a conservative basis for projecting future water demand, and provides an additional buffer if per capita demand increases in the future for existing customers.

4.4.3. Existing Retail Customer Future Use

To adequately analyze the reliability of water systems and conservatively estimate future use (see Chapter 5), the City is using water use values for 2021 as a representative annual customer demand. As shown in **Table 4-4**, demand for 2021 includes a total annual customer demand of about 83,000 acre-feet, with a production need of just over 91,000 acre-feet when considering system losses.

While these existing customers may undertake a variety of conservation measures – actively through decisions to modify a behavior or a water use, or passively through the purchase of appliances and fixtures that simply use less water – they may also maintain their use as-is. Holding the current use as a constant for all existing customers into the future will provide a conservative number that can be re-evaluated prior to the 2030 UWMP and compliance with forthcoming water use objectives.¹⁰¹

4.4.4. New Retail Customer Future Use

The main factor influencing future customer water use is future growth. To blend different methodologies, this section separates future growth based on whether or not developments were previously considered in the City’s 2023 WMP, or if they were identified since then. From there, growth anticipated to occur as described in the 2023 WMP is presented, followed by new forecasted demands identified since 2023.

This demand projection methodology incorporates increased demand within the City’s current City limits, as well as potential demand outside of City boundaries.

New Development Plans from the 2023 WMP

Previously, the City anticipated future growth to occur in 59 Opportunity Areas. This number has since increased to 62, as discussed further below. For the 59 Opportunity Areas initially identified, however, growth projections were forecasted in terms of dwelling units, jobs, and maximum floor to area ratios. Unit water use factors were then applied to corresponding land use types within the various Opportunity Areas. Residential and non-residential water uses were calculated using total dwelling units per land use type and total jobs per land use type (respectively). **Table 4-5** presents the total retail water use projected in the 2023 WMP.¹⁰² Because growth attributed to opportunity area and non-opportunity area new customer growth was not observed in actual water use in 2025, these projections were re-scaled to incorporate the anticipated growth through the planning horizon.

¹⁰¹ Per California Water Code Section 10609.20, urban water suppliers shall calculate a water use objective composed of, among other factors, aggregated efficient indoor water use based upon standards of no more than 55 gpcd.

¹⁰² Derived from the City of Sacramento’s Water Master Plan Update, January 2023, prepared by West Yost

TABLE 4-5: NEW CUSTOMER FUTURE USE FORECASTED IN 2023 (ACRE-FEET PER YEAR)

		2030	2035	2040	2045	2050
New (Opportunity Area)	Residential	5,141	10,283	15,424	19,280	23,136
	Non-Residential	1,549	3,098	4,647	5,809	6,971
New (Non-Opportunity Area)	Residential	1,459	2,919	4,378	5,473	6,567
	Non-Residential	353	707	1,060	1,325	1,590
Subtotal Potable Water Use		8,503	17,006	25,509	31,886	38,264

New Development Plans Since the 2023 WMP

Since the preparation of the 2023 WMP, the City has identified additional developments located within the City’s Service Area to include within their future retail water use forecast. Forecasted water uses for Stone Beetland, a residential and commercial development, as well as Aspen 1, an industrial development, are shown on **Table 4-6**.¹⁰³¹⁰⁴ The City estimates future demands by applying a blanket water use demand factor calculated using recent water use data, and land use data from the Sacramento Area Council of Governments (SACOG), to known project acreages to accommodate for potential land use changes throughout project development and implementation. Also considered in this updated demand table is Cal Expo, who indicated in correspondence with the City that it may become a future retail customer.

TABLE 4-6: NEW CUSTOMER FUTURE USE FORECAST SINCE 2023 (ACRE-FEET PER YEAR)

		2030	2035	2040	2045	2050
New	Stone Beetland	681	681	681	681	681
	Cal Expo	381	381	381	381	381
	Aspen 1	406	406	406	406	406
Subtotal Potable Water Use		1,468	1,468	1,468	1,468	1,468

New Development Outside City Service Area

So far, demands assessed within this section reflect anticipated growth within the City’s service area. Although developments outside of the City’s Sphere of Influence (SOI) are not currently anticipated to be served by the City, these areas can be additionally assessed to

¹⁰³ The project site is located in south Sacramento and is generally bounded by Cosumnes River Boulevard to the south, Morrison Creek to the east, the extension of 24th Avenue to the west, and adjacent City-owned vacant land to the north, and includes the Morrison Creek Sacramento Regional Transit light rail station.

¹⁰⁴ The Aspen 1-New Brighton project is an approved 232-acre mixed-use development at Jackson Road and Watt Avenue in Sacramento.

evaluate future water and infrastructure needs should the City need to provide water service. Projected water use associated with these developments, calculated using a blanket water use demand factor based on recent water and land use data within the County as well as anticipated acreages of potential development areas is conservatively estimated to be approximately 36,000 acre-feet annually.

4.4.5. Retail Customer Future Use

Section 4.4.3 establishes existing retail customer demand as approximately 85,500 acre-feet annually, including system losses, which is held constant as a conservative planning baseline. Section 4.4.4 adds projected potable demand from anticipated new developments within and adjacent to current City limits. Combined with a 10-percent drought rebound factor applied to the existing baseline, the total retail potable water demand is presented in **Table 4-7**.

TABLE 4-7: OVERALL NEW CUSTOMER FUTURE WATER USE (ACRE-FEET PER YEAR)

	2030	2035	2040	2045	2050
Potable Customer Water Use Subtotal	92,831	101,334	109,837	116,214	122,591
Distribution System Water Loss	9,283	10,133	10,984	11,621	12,259
Drought Rebound Factor	9,115	9,115	9,115	9,115	9,115
Total Potable Water Use - Retail	111,228	120,582	129,935	136,950	143,965

4.5. Forecasting Wholesale Customer Water Use

The City serves water as both a retailer and a wholesaler. This section forecasts future water demands for wholesale users.

4.5.1. Future Customer Demand Projection Methodology

The City's future wholesale customer demand projection methodology is informed by close regional coordination with local water suppliers, including both existing and potential new wholesale customers, primarily within the American River Place of Use. The City's demand projections for existing customers reflect updated demand forecasts provided by SSWD, SCWA, Cal-Am, and GSWC. For certain service areas and other smaller water suppliers where demands were not provided (for instance, Cal-Am's Arden service area, serving less than 3,000 connections), the City either incorporated demands forecasted in the 2023 WMP or calculated a reasonable estimate using regional demand factors applied at a parcel-level.

4.5.2. Existing and Expected Customer Future Use

Assuming the City maintains existing contracts and commitments as-is throughout the planning horizon, an estimate of the City's water use associated with serving existing and anticipated wholesale customers in five-year increments over the planning horizon (not including drought conditions) is provided in **Table 4-8**. As described in Chapter 2, the City has existing wholesale contracts with several customers and makes deliveries at customer interties.

TABLE 4-8: EXISTING CUSTOMERS - FUTURE WHOLESALE WATER DELIVERIES (ACRE-FEET PER YEAR)¹⁰⁵

		2030	2035	2040	2045	2050
Cal-Am	Cal-Am Arden	206	206	206	206	206
	Cal-Am Fruitridge Vista (47th and Sampson)	3,630	3,630	3,630	3,630	3,630
	Cal-Am Parkway	1,108	1,108	1,108	1,108	1,108
	Cal-Am Suburban (Folsom)	1,264	1,265	1,266	1,267	1,268
	Cal-Am Rosemont					
SCWA	SCWA International Airport	1,400	1,400	1,400	1,400	1,400
	SCWA Zone 50 Metro Air Park	630	1,111	1,956	3,449	6,076
	SCWA Zone 40	22,921	22,956	22,994	22,994	22,994
SSWD	SSWD Sac Suburban (Northrop)	26,064	26,064	26,064	26,064	26,064
	SSWD Sac Suburban (Arden)					
	SSWD Sac Suburban (Northridge)					
	SSWD Sac Suburban (Del Paso Manor)					
NUSD	Natomas Unified School District	69	69	69	69	69
Totals		57,292	57,809	58,693	60,187	62,815

4.5.3. Potential Wholesale Customer Future Deliveries

In the future, the City may consider expanding its wholesale services to deliver water to other regional purveyors. As described in the 2023 WMP, other wholesale customers that the City may realistically serve within the planning horizon include water agencies within the American River Place of Use boundary. To provide a conservative estimate, new customer

¹⁰⁵ Demands for most the City's existing wholesale customers are based on recent data provided by Cal-Am, SCWA, and SSWD, reflecting preliminary forecasts prepared for their respective 2025 UWMPs. Demands for Cal-Am Arden, SCWA International Airport, SCWA Zone 40, and NUSD are maintained from the City of Sacramento's Water Master Plan Update (2023), Table 4-8.

future uses reflect a scenario where the City would provide a likely quantity of wholesale water to all of these water agencies through 2040. To comport with current wholesale agency representations, existing wholesale agreements, and infrastructure limitations, future wholesale uses are shown as constant from 2040 through 2050 for certain customers. These assumptions could change and will be reevaluated in subsequent UWMP planning cycles.

Other potential areas that the City could provide water to, located either partially or entirely within the American River POU, include SCWA’s Arden Park service area, SCWA’s Northgate service area, SSWD’s Arden service area, SSWD’s new Del Paso Manor service area, Golden State Water Company, Tokay Park Water District, Florin County Water District, and a portion of Carmichael Water District.¹⁰⁶ Although none of these agencies have executed agreements or current delivery arrangements for those additional service areas with the City, potential demands are included in their projections, presented in **Table 4-9**, to assess the City’s wholesale capacity, infrastructure, and overall supply reliability.

TABLE 4-9: POTENTIAL FUTURE WHOLESALE CUSTOMER WATER DELIVERIES (ACRE-FEET PER YEAR)¹⁰⁷

		2030	2035	2040	2045	2050
SCWA	SCWA Arden Park	3,518	3,668	3,768	3,872	3,977
	SCWA Northgate	1,074	1,074	1,074	1,074	1,074
Other	Golden State Water Company	864	861	686	877	889
	Tokay Park Water Company	-	47	95	95	95
	Florin County Water District	-	919	1,837	1,837	1,837
	Carmichael Water District	500	500	500	500	500
Totals		5,956	7,069	7,960	8,255	8,372

The City has coordinated with various existing wholesale customers located with the American River POU to discuss the potential for expanding conjunctive use, specifically, conducting in-lieu recharge through the Sacramento Regional Water Bank. Utilizing the City’s surface water rights under wholesale arrangements to meet future demands in the American River POU would allow the City’s regional partners to bank groundwater through in-lieu recharge or aquifer storage and recovery (ASR) during favorable hydrologic conditions.

¹⁰⁶ Demands for the additional SSWD service areas are included in the combined forecast in Table 4-10.

¹⁰⁷ Demands for SCWA and GSWC were provided to the City, aligning with SCWA and GSWC’s preliminary forecasts prepared for their respective 2025 UWMPs. Demands for Tokay Park and Florin County Water District are from the City of Sacramento’s 2023 WMP, Table 4-8. Demands for Carmichael are estimated based on regional demand factors applied at a parcel level for the American River POU overlap.

Regional coordination is ongoing, and expanding this conjunctive use program is anticipated to benefit regional reliability.

4.5.4. Wholesale Customer Future Use

Existing and new wholesale demands forecasted through the planning horizon are summarized on **Table 4-10**. The City does not anticipate providing recycled water to wholesale customers.

TABLE 4-10: TOTAL POTENTIAL FUTURE WHOLESALE CUSTOMER WATER DELIVERIES (ACRE-FEET PER YEAR)¹⁰⁸

		2030	2035	2040	2045	2050
Cal-Am	Cal-Am Arden	206	206	206	206	206
	Cal-Am Fruitridge Vista (47th and Sampson)	3,630	3,630	3,630	3,630	3,630
	Cal-Am Parkway	1,108	1,108	1,108	1,108	1,108
	Cal-Am Suburban (Folsom)	1,264	1,265	1,266	1,267	1,268
	Cal-Am Rosemont					
SCWA	SCWA International Airport	1,400	1,400	1,400	1,400	1,400
	SCWA Zone 50 Metro Air Park	630	1,111	1,956	3,449	6,076
	SCWA Zone 40	22,921	22,956	22,994	22,994	22,994
	SCWA Arden Park	3,518	3,668	3,768	3,872	3,977
	SCWA Northgate	1,074	1,074	1,074	1,074	1,074
SSWD	SSWD Sac Suburban (Northrop)	26,064	26,064	26,064	26,064	26,064
	SSWD Sac Suburban (Arden)					
	SSWD Sac Suburban (Northridge)					
	SSWD Sac Suburban (Del Paso Manor)					
NUSD	Natomas Unified School District	69	69	69	69	69
Other	Golden State Water Company	864	861	686	877	889
	Tokay Park	-	47	95	95	95
	Florin County Water District	-	919	1,837	1,837	1,837
	Carmichael	500	500	500	500	500
Totals		63,248	64,878	66,653	68,442	71,187

¹⁰⁸ For data sources, see footnotes for Tables 4-8 and 4-9

4.6. Projecting Disadvantaged Community Water Use

Pursuant to CWC §10631.1, retail suppliers are required to include projected water use for lower income households. Per California Health and Safety Code §50079.5, a lower income household has an income below 80 percent of area median income, adjusted for family size. For purposes of this UWMP, the number of existing lower income households was derived from the City's 2021 – 2029 Housing Element, indicating about half of the City's households are considered Low, Very-Low or Extremely-Low Income. Assuming that water demand for residential households is equal regardless of income, approximately half of the City's residential water deliveries were made to disadvantaged households.

For purposes of estimating the future water needs, 50% of the total single-family and multi-family connections are presumed to represent disadvantaged households. Applying this condition to the forecast water use for the entire City results in the estimate provided in **Table 4-11**.

TABLE 4-11: ESTIMATED RESIDENTIAL LOW-INCOME WATER USE FORECAST (ACRE-FEET PER YEAR)

	2030	2035	2040	2045	2050
Total Residential Potable Water Use - Retail	64,059	70,660	77,261	82,211	87,162
Low Income Use	32,030	35,330	38,630	41,106	43,581
% of total Potable	50%	50%	50%	50%	50%

4.7. Long-Range Demand Scenarios

The 2025 UWMP Guidebook encourages water suppliers to consider long-range planning horizons that reflect the full lifecycle of water infrastructure and the extended terms of water rights held by the agency. Accordingly, this section presents a set of long-range demand scenarios intended to frame potential conditions that could materially increase the City's water needs through 2100. These scenarios extend beyond the UWMP planning horizon and are intended to support long-term planning and management rather than near-term reliability determinations. The purpose of this analysis is not to produce a precise long-range forecast nor for this document to commit the City to any particular scenario, but instead this analysis is intended to characterize the range of conditions that could influence future water demand and to demonstrate the strategic importance of preserving and exercising the City's full water right portfolio so that the City can meet future water demands.

This assessment identifies six broad categories of demand growth (as well as storage opportunities to support future demand) that could materially increase the City's water needs through 2100: groundwater recharge and water banking, full buildout of the General

Plan and high-density housing/commercial development, annexation and wholesale service in opportunity areas, water-intensive industrial development, environmental flow dedications, and climate-driven demand increases. These scenarios are not mutually exclusive; several are likely to occur in combination over the extended planning horizon.

4.7.1. Groundwater Recharge and Water Banking

The City can recharge groundwater using surface water through in-lieu recharge and is exploring aquifer storage and recovery (ASR) locally and in the region. This represents future demands for the City's surface water supplies as a storage opportunity. The Sacramento Regional Water Bank has the potential to store up to 65,000 acre-feet of water during wet years, with future projects potentially expanding storage to 90,000 acre-feet annually. Beneficially recharging the City's surface water represents an investment in regional water security, providing benefits that could be shared beyond City limits through groundwater exchanges or transfers with other legal users of water, including those experiencing water insecurity.

The region is well-suited to expand in-lieu recharge through the Sacramento Regional Water Bank.¹⁰⁹ Utilizing the City's surface water rights under wholesale arrangements to meet future demands in the American River Place of Use would allow the City's regional partners, including Cal-Am, Golden State, SCWA, SSWD, Carmichael Water District, and RWA, to bank groundwater through in-lieu recharge or aquifer storage and recovery (ASR) during favorable hydrologic conditions. Recharge and meeting demands using the City's surface water represents an investment in regional water security and climate resilience while demonstrating the strategic importance of preserving and exercising the City's full surface water rights portfolio. The City began the process of coordinating with wholesale agencies located within the American River Place of Use to quantify future demands that the City could potentially serve with surface water, reducing demands for supplies that could be recharged or left in the ground.

Groundwater banking and in-lieu recharge would represent long-term storage as a demand category, consistent with DWR's UWMP Guidebook classification and distinct from pass-through or same-year recovery operations. Groundwater banking and storage allows the City to better plan for extended drought and changing climatological conditions.

Protecting groundwater quality is an important component of climate adaptation and watershed resilience, particularly as climate-related stressors can amplify risks such as water

¹⁰⁹ Regional Water Authority, "How the Water Bank Works," Sacramento Regional Water Bank, accessed March 19, 2026, <https://sacwaterbank.com/water-bank/how-the-water-bank-works/>

quality degradation and groundwater depletion. In recognition that groundwater conditions and water-quality challenges cross jurisdictional boundaries, the City will continue to coordinate regionally through established groundwater and water-planning partnerships, including participation in Sacramento Groundwater Authority and Sacramento Central Groundwater Authority efforts and related regional planning forums that synthesize groundwater management activities consistent with SGMA implementation. In collaboration with neighboring water agencies, the City will pursue bridging solutions that reduce near-term groundwater-quality risk while longer-term watershed and basin sustainability actions are advanced.

4.7.2. Full Build-Out of General Plan and High-Density Housing

The City of Sacramento spans 101 square miles, currently at a density of approximately 5,200 people per square mile. Through 2100, the City would reasonably approach buildout conditions, supporting substantially higher residential density over this timeframe. Following in the footsteps of other medium- to high-density cities in Northern California, Sacramento could potentially support between 6,000 and 18,000 people per square mile, modeled after San Jose and San Francisco (respectively). At an indoor water use rate of 42 gpcd, the City can reasonably anticipate approximately 90,000 AFY of indoor demand at full buildout, with outdoor demands increasing likewise.

In addition to general residential growth, the City has the potential to accommodate high-density housing to support continued population growth in the region. Mid-rise developments typically range from approximately 20–48 units per acre, while high-rise buildings may exceed 100 units per acre. At representative water use rates for multi-unit residential development, demand for individual high-density sites could represent hundreds of acre-feet per year, with total demand scaling substantially across the broader service area as vacant and underutilized lands are developed.¹¹⁰

4.7.3. Annexation and Wholesale Service in Opportunity Areas

The 2023 WMP included a sensitivity analysis quantifying demands associated with potential opportunity areas adjacent to the City's boundaries where future growth is anticipated to occur. These areas represent an estimated near-term demand of approximately 35,000 AFY through 2050. Through 2100, continued development in areas outside the City's current limits may rely on the City's municipal water supplies through future annexation or wholesale service agreements. Assuming comparable growth rates to those observed within the City's

¹¹⁰ Santa Clara County, *Santa Clara County Housing Element and Stanford Community Plan Update, Draft Environmental Impact Report* (June 2023).

vicinity, outside demands could represent an additional 100,000 AFY in future municipal supply obligations through 2100.

The City also has an opportunity to expand its role as a regional water wholesaler by developing new wholesale contracts to serve customers in unincorporated areas falling within the American River Place of Use boundary. For example, SCWA's 2020 Urban Water Management Plan projects total water demands for Zone 40 reaching approximately 80,000 acre-feet per year through 2045, driven by continued residential and commercial growth across the broader Sacramento area. A wholesale agreement structured to supply a portion of SCWA's unincorporated service area could reasonably support up to 40,000 AFY in City deliveries by 2100 as regional growth continues.¹¹¹

Aside from SCWA, other sizeable agencies serving retail demands within the American River POU include Cal-Am Water, Sac Suburban Water District, and Golden State Water Company. If the City were to serve approximately half of those existing retail demands scaled through 2100 through new wholesale contracts, additional future demands on the City's municipal supply could represent hundreds of thousands of acre-feet of water annually.^{112,113,114}

4.7.4. Water-Intensive Industries

The City is well-positioned to attract and support a range of water-intensive industries that could substantially increase long-term municipal water demand, given its access to reliable power infrastructure, surface water supplies, as well as proximity to major transportation corridors. These may include:

Data Center Corridor: The City has strong potential to establish a data center corridor, as Artificial Intelligence (AI) hyperscale facilities require reliable access to both power and water infrastructure, both of which the region can provide. Individual data centers can use from 20 to over 600 acre-feet of water per year, with total water demand effectively doubling when accounting for indirect uses such as power generation and

¹¹¹ Sacramento County Water Agency, *2020 Urban Water Management Plan* (Sacramento, CA: Sacramento County Water Agency, June 24, 2021)

¹¹² Golden State Water Company, *2020 Urban Water Management Plan: Cordova System* (San Dimas, CA: Golden State Water Company, August 6, 2021)

¹¹³ Sacramento Suburban Water District, *2020 Urban Water Management Plan* (Sacramento, CA: Sacramento Suburban Water District, 2021)

¹¹⁴ California American Water, *Sacramento Main District 2020 Urban Water Management Plan* (San Diego, CA: California American Water, July 1, 2021),

semiconductor manufacturing. Depending on the number and scale of facilities, the City could support over 50,000 AFY of water demand for data center operations.¹¹⁵

Advanced Manufacturing: The City has the potential to support the reshoring of advanced manufacturing under the federal CHIPS and Science Act by providing the reliable water resources necessary for semiconductor and related high-technology industries. Advanced semiconductor fabrication facilities are water-intensive, commonly requiring over 10,000 acre-feet per year per facility.^{116,117}

Green Hydrogen Production: The City has the potential to support green hydrogen production to advance California's net-zero emissions goals. Individual green hydrogen plants can use upwards of 3,000 acre-feet of water per year, and depending on the quantity and scale of facilities developed within the service area.¹¹⁸

Nuclear Energy Production: The City has the potential to support nuclear power generation as a reliable, carbon-free energy source if sufficient long-term water supplies are available to meet cooling and operational demands. A representative 1,000-megawatt nuclear facility operating at high capacity could require over 10,000 acre-feet of water per year.¹¹⁹

4.7.5. Environmental Flow Dedications

The City could potentially leverage its water rights to voluntarily support in-stream environmental flow dedications beyond its current dedications, consistent with the State Water Board's policy priorities for the Bay-Delta watershed.

Under Water Code Section 1707, the City, as a water rights holder, may petition the Board for a change in purpose of use to preserve or enhance wetlands habitat, fish and wildlife resources, or recreation in or on the water. The City could align dedicated volumes with historical conservation savings, match anticipated future reductions in consumptive use,

¹¹⁵ Marie Grimm, Nell Green Nylen, and Michael Kiparsky, *Regulating Data Center Water Use in California* (Berkeley, CA: Center for Law, Energy & the Environment, UC Berkeley School of Law, February 2026)

¹¹⁶ U.S. Department of Commerce, National Institute of Standards and Technology, *Final Programmatic Environmental Assessment for Modernization and Expansion of Existing Semiconductor Fabrication Facilities under the CHIPS Incentives Program* (Washington, DC, June 28, 2024).

¹¹⁷ John Rydzewski, "Managing Water Infrastructure for Semiconductor Fabs: Challenges and Opportunities in the CHIPS Act Era," *Water Technology Online*, December 5, 2024.

¹¹⁸ Clean Energy Group, "Green Hydrogen's Impact on Water Supplies," September 10, 2024, <https://www.cleangroup.org/wp-content/uploads/Green-Hydrogen-Fact-Sheet.pdf>

¹¹⁹ Idaho National Laboratory, *LWRS Report: Water-Energy Nexus, Phase 2* (Idaho Falls, ID: Idaho National Laboratory, 2021) <https://lwrsl.inl.gov/content/uploads/11/2024/03/AnalysisWater-EnergyIssues.pdf>

collaborate with the United States Bureau of Reclamation regarding operations at Folsom Reservoir, or implement groundwater substitution to demonstrate that diverted water was made available but not consumed.

Additionally, the City is a signatory in the American River Voluntary Agreement (VA) now referred to as the Healthy Rivers and Landscape Program (HRL), serving its part to help ensure minimum flow requirements are met. The American River VA proposes to add 30, 40, 10, and 10 TAF in critical, dry, below normal, and above normal water years, respectively. Under this structure, the City's flow obligations, in conjunction with regional partners as described in the VA, could reach up to 40 TAF, and if the VA as proposed proves insufficient, additional volumes of 10–20% above proposed levels could be required from American River VA parties, representing up to 48 TAF in total dedicated environmental flows, depending on conditions.¹²⁰

The City also maintains the ARTESIAN agreement as described in Chapter 2 to ensure water is available for environmental releases. Although this agreement primarily relies upon groundwater, RWA Members, including the City, are required to make up to 30,000 acre-feet of water available to the ecosystem during a Call Year, during which a portion of the City's surface water available for diversion under Permits 11358–11361 would not be diverted from the American River, and would remain as Environmental Water. To ensure that this water is available during a call year, the City may characterize this requirement as a demand category in the future in order to fulfill its obligations under the Water Quality Control Plan update, which includes the VA and HRL.

4.7.6. Climate Adaptation and Watershed Resilience

Climate change is expected to increase water demand across multiple end uses while simultaneously reducing the reliability and seasonal timing of surface water availability.

Increased Per Capita Indoor Demand Due to Heat. Research drawing on smart meter data from over 40,000 urban households found that household water usage increases with ambient temperature and accelerates during heatwave events, with climate projection models estimating long-term household water demand increases of 7–44% under moderate to high emissions scenarios through the end of the century.¹²¹

¹²⁰ Subject to ongoing negotiation and review. California State Water Resources Control Board, Water Quality Control Plan for the San Francisco, Bay/Sacramento–San Joaquin Delta Watershed (Bay-Delta Plan), December 2025 Revised Draft Sacramento/Delta Updates, December 2025, 69, https://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/docs/2025/h/dec2025-rev-draft-sacdelta-bdplan.pdf

¹²¹ Peng Qin, Shuai Chen, Jie-Sheng Tan-Soo, and Xiao-Bing Zhang, "Urban Household Water Usage in Adaptation to Climate Change: Evidence from China," *Environmental Science & Policy* 136 (2022): 486–496, <https://www.sciencedirect.com/science/article/abs/pii/S1462901122002271>

Applying this range to the City's projected baseline indoor demand yields an estimated 6,000 to 40,000 AFY of additional climate-driven indoor demand by 2100.

Increased Landscape Demand Due to Elevated ETo. Rising temperatures are projected to significantly increase evapotranspiration demand within the City's service area. Climate projections anticipate a 3–5°F temperature increase by 2070, driving a corresponding 13–18% rise in reference evapotranspiration (ETo).¹²² Sacramento falls within CIMIS ETo Zone 14, with a baseline annual ETo of 57 inches; this projected increase translates to approximately 7.4–10.3 additional inches of annual ETo.¹²³ Approximately 36% of City lands are comprised of tree canopy, grasses, and vegetation that depend on adequate irrigation to sustain the environmental services they provide, including carbon sequestration, stormwater management, air quality improvement, and urban heat island mitigation.¹²⁴ Preserving urban green infrastructure will require an estimated 15,000–20,000 additional acre-feet per year.

Decreased Runoff and Diversion Rate Urgency. As examined in the American River Basin Study, climate change will reduce available surface water while simultaneously shifting its seasonal timing. American River runoff could decrease from 3,472 TAF to 3,151 TAF in central tendency models, or as much as 2,840 TAF in hot-dry scenarios, a reduction of nearly 1 MAF of available volume. This has cascading effects on groundwater recharge and environmental applied water demands, and changes in seasonal timing may reduce effective storage at Folsom Reservoir¹²⁵. Under these conditions, the City will need to strategically maximize surface water diversions at full contractual capacity when supplies are available, reinforcing the importance of maintaining its full authorized diversion rates and volumes.

Wildfire and Smoke Events. The City will require robust water supplies to meet future municipal demands associated with increased wildfire and smoke events. Firefighting operations require significant reservoir storage and high-capacity distribution

¹²² Daniel J. McEvoy et al., "Projected Changes in Reference Evapotranspiration in California and Nevada: Implications for Drought and Wildland Fire Danger," *Earth's Future* 8, no. 11 (2020): e2020EF001736

¹²³ California Irrigation Management Information System, *CIMIS Reference Evapotranspiration Zones* (Sacramento: California Department of Water Resources, n.d.), <https://www.cimis.water.ca.gov/Content/pdf/CimisRefEvapZones.pdf>.

¹²⁴ City of Sacramento, *Sacramento Urban Tree Canopy Assessment* (Sacramento: City of Sacramento, 2018), <https://www.cityofsacramento.gov/content/dam/portal/pw/Maintenance-Services/Urban-Forestry/Urban-Forest-Master-Plan/Copy-of-Sacramento-UTC-Assessment-20180515.pdf>.

¹²⁵ U.S. Bureau of Reclamation, *American River Basin Study* (Washington, DC: U.S. Department of the Interior, 2021), sec. 3.2.1, "Total Unimpaired Runoff in the Study Area," <https://www.usbr.gov/watersmart/bsp/docs/arbs/ARBS-Study.pdf>

systems, and dedicated firefighting water facilities may be necessary to serve growing urban areas facing intensifying fire risk.¹²⁶ Smoke events elevate indoor water use as populations shelter in place and deploy air filtration, humidification, and cooling systems. Additionally, as illustrated by the Paradise Camp Fire, wildfires can damage distribution infrastructure and contaminate source water supplies, requiring additional supplies to flush, remediate, and restore service.^{127,128}

Climate Migration. Climate-driven migration represents a significant potential source of future population growth for the City, corresponding with increased water demand. Historically, regional climate disruption has generated population movement; the 1930s Dust Bowl displaced an estimated 2.5 million people across the Great Plains, with nearly 300,000 ultimately resettling in California alone.¹²⁹ A comparable disruption today, such as a sustained regional drought, catastrophic wildfire, or accelerating coastal flooding and seawater intrusion could drive large-scale population movement toward inland cities offering reliable power and freshwater supplies. A climate migration event could reasonably add tens of thousands of new residents to the Sacramento region, significantly increasing municipal water demand.

4.7.7. Conclusion and Water Use Summary

This long-range demand assessment demonstrates that the City's water demands through 2100 could grow significantly from the 25-year baseline projections presented in Section 4.6. The scenarios analyzed here, summarized in **Table 4-12**, are not exhaustive but illustrate how growth, economic development, climate change, and regional leadership opportunities each carry meaningful implications for long-term water supply needs while still managing the water resources responsibly and consistently with regulations and obligations. The table below summarizes the estimated demand ranges associated with each scenario category.

¹²⁶ Supporting increases in storage and system capacity would be balanced with other system goals such as maintaining pressures and water quality.

¹²⁷ California Environmental Protection Agency et al., *Palisades Fire and Water Supply Analysis* (Sacramento: CalEPA, 2025), <https://calepa.ca.gov/wp-content/uploads/2025/11/Final-clean-Palisades-Fire-and-Water-Supply-Analysis.pdf>.

¹²⁸ PreventionWeb, "Wildfires Can Poison Drinking Water: Here's How Communities Can Be Better Prepared," PreventionWeb, accessed March 2026, <https://www.preventionweb.net/news/wildfires-can-poison-drinking-water-heres-how-communities-can-be-better-prepared>.

¹²⁹ Abraham Parrish, "Climate Migrants of the 1930s Dust Bowl," *Worlds Revealed: Geography & Maps at the Library of Congress* (blog), December 1, 2023, <https://blogs.loc.gov/maps/2023/12/climate-migrants-of-the-1930s-dust-bowl/>

TABLE 4-12: LONG TERM DEMAND SCENARIO WATER USE

Category	Scenario	Estimated Demand (AFY)
Groundwater Recharge & Water Banking	Sacramento Regional Water Bank	Up to 90,000
General Plan & High-Density Housing	Infill and buildout of vacant lands within City limits	Up to 90,000
	High-density housing	250-750
Annexation & Wholesale Service	Opportunity area annexation	100,000+
	New wholesale service	100,000-250,000
Water-Intensive Industries	Data center corridor	600-50,000
	Advanced semiconductor fabrication	10,000+
	Green hydrogen production	3,000+
	Nuclear power generation	10,000+
Environmental Flow Dedications	American River VA backstop	40,000-48,000
	WC § 1707 in-stream flow dedications	Not readily quantifiable
Climate Adaptation & Watershed Resilience	Increased per capita indoor demand due to heat	6,000-40,000
	Increased landscape/ETo demand	15,000–20,000
	Decreased Runoff and diversion rate urgency	Not readily quantifiable
	Wildfire and smoke event response	Not readily quantifiable
	Climate migration population growth	Not readily quantifiable

While individual scenarios would not manifest simultaneously at their maximum values, their potential for overlap underscores the importance of preserving the City's full water right portfolio to retain operational flexibility through 2100 and beyond.

Chapter 5

Water System Reliability

This chapter provides water system reliability findings as required under Water Code §10635 and provides reliability information that may be used in completing an annual supply and demand assessment pursuant to Water Code §10632.1. The City has reliable water supplies over a 25-year planning horizon in normal, single dry, and five consecutive dry year water supply scenarios.

Assessing water service reliability is one of the fundamental purposes of preparing an UWMP. Water service reliability reflects the City's ability to meet the water needs of its customers, including retail customers and wholesale urban suppliers, with water supplies under varying conditions. The City's UWMP considers the reliability of meeting customer water use by analyzing plausible hydrological, regulatory, and climate variability, as well as other factors impacting the City's water supply and water use. This reliability assessment looks beyond the City's historical capabilities and considers what could be reasonably foreseen in the future.

This chapter synthesizes the details embedded in Chapter 3 (Water Supply) and Chapter 4 (Water Use) and provides a rational basis for future decision-making related to supply management, demand management, and project development. The Five-Year Drought Risk Assessment, Long-Term Service Reliability, and a description of the City's Annual Reliability Assessment procedures are presented in this chapter.

In short, the findings of these risk and reliability assessments are that the City has reliable water supplies available to support both future retail and wholesale demands for its service area through 2050.

5.1. Five Year Drought Risk Assessment

The Drought Risk Assessment (DRA) requires a methodical assessment of water supplies and water uses under an assumed drought period that lasts five consecutive years.

To adequately assess the monthly variability associated with the City's surface water supplies, the City prepared an independent monthly assessment of the water supplies and demands for its system. This assessment also considers system constraints, such as those associated with surface water intake infrastructure, diversion limitations, water treatment

plant operations, water quality concerns, as well as groundwater pumping constraints, which may also influence the near-term management of the City’s water asset portfolio.

The City draws from multiple watersheds and groundwater basins, with each source having unique attributes affecting reliability under various hydrological and regulatory conditions, requiring careful consideration. These considerations are further examined in Section 5.3. Nevertheless, the City of Sacramento has organized and coordinated its water portfolio management to ensure water supply reliability in the event of a severe drought, as shown in this DRA.¹³⁰ The City’s DRA represents a consolidation of its surface water, groundwater, and recycled water supplies into an organized monthly management structure.

Table 5-1 below shows the City of Sacramento’s DRA, integrating all of its supplies for 2026 through 2030 as described in Chapter 3 and reflecting the dry year unconstrained retail and wholesale water uses described in Chapter 4. As the table shows the City of Sacramento has sufficient water assets available in all months under its current water management system.

TABLE 5-1: FIVE YEAR DROUGHT RISK ASSESSMENT (ACRE-FEET)

Five Year Drought	2026	2027	2028	2029	2030
Supply	345,354	348,854	370,253	373,753	381,526
Demand	118,457	132,462	146,467	160,471	174,476
Difference	226,897	216,392	223,786	213,282	207,050

5.2. Long Term Service Reliability

The Urban Water Management Planning Act directs urban water purveyors to analyze water supply reliability in a normal, single dry, and five consecutive dry years over a 20-year planning horizon. The 2025 UWMP Guidebook recommends extending that period to twenty-five (25) years to provide a guiding document for future land use and water supply planning through the next UWMP cycle. The following subsections describe the long-term water service reliability through a 25-year planning horizon.

5.2.1. Constraints on Water Sources

The City of Sacramento’s supply sources are affected by a variety of factors, including physical, legal, environmental, water quality, and climate constraints. These factors and how they impact the reliability of their water supply are discussed below.

¹³⁰ The City also actively manages supply under other shortage considerations discussed in Chapter 3.

Consistency with Bond Disclosure

The City's assessment of long-term water supply reliability is consistent with, and informed by, the City's water revenue bond disclosure documents.¹³¹ Reliability statements in this Urban Water Management Plan are intended to align with the City's official bond disclosures and do not introduce new or materially different risks beyond those already disclosed to investors. As reflected in bond offering and continuing disclosure materials, the City has historically managed, and expects to continue managing, hydrologic, regulatory, operational, and water quality challenges through active system operations, capital investment, and adaptive planning.

Physical

Although the City's current supply and distribution system is sufficient to meet existing demands, the hydraulic capacity of supply and distribution system facilities fundamentally affect water supply reliability, both for retail and wholesale customers. The City's 2023 Water Master Plan examines the treatment capacity of the EAFWTP and the SRWTP, briefly summarized below.

The EAFWTP reliably operates at an 80-MGD capacity, limited from its initial 200-MGD capacity due to plant facility conditions as well as environmental agreements limiting diversions during summer months and other times of the year. The reliability of the SRWTP varies seasonally, ranging from a 160 MGD capacity during the summer to 120 MGD for the remainder of the year, although low river levels may reduce the capacity of the plant in the summer months. However, the City is exploring projects to restore EAFWTP and SRWTP facilities to provide a treatment capacity of 120 MGD and 310 MGD, respectively.

The City currently also has permitted wells to supply municipal water. While the City has invested in rehabilitating existing wells, the City's 2017 Groundwater Master Plan and 2023 Groundwater Master Plan Well Replacement Program and EIR also identified locations for future replacement wells.

Legal

As discussed in Chapter 3, under the 1957 Operating Contract, the City accepted contractual limits on its diversion rates and volumes from the American River and Sacramento River permits in exchange for USBR commitments to provide the City with a dependable surface water supply. The Sustainable Groundwater Management Act and resulting Groundwater

¹³¹ City of Sacramento, Official Statement – Water Revenue Bonds (2017); City of Sacramento, Official Statement – Water Revenue Refunding Bonds (2020); and related continuing disclosure filings made in accordance with the City's Water Revenue Bond continuing disclosure undertakings.

Sustainability Agencies and Plans establish measurable objectives and sustainability criteria for the City and other overlying groundwater users. The Regional Water Authority guides implementation and coordination of groundwater initiatives.

Environmental

The quantity of water diverted from the American River at the EAFWTP is limited by the City's Water Forum Agreement Purveyor Specific Agreement during extremely dry years and times when river flows are below the Hodge Flow Criteria. The City may still divert American River water south of the confluence through the City's existing Sacramento River diversion point during times when EAFWTP diversions are limited.

Water Quality

Water quality is an ongoing consideration for both surface water and groundwater sources and is actively monitored and managed by the City. Regulatory standards, detection methods, source water conditions, and treatment technologies evolve over time, and the City continuously evaluates these changes as they relate to its water system planning and operations. The City's supplies are treated to meet all applicable state and federal drinking water standards.

Consistent with the City's bond disclosure documents, water quality considerations are not expected to impair the City's ability to reliably serve existing or future customers. The City plans for and implements treatment improvements, operational adjustments, and capital projects as needed to address changing water quality conditions and regulatory requirements before such changes would materially affect water supply reliability.

A comprehensive discussion of source water quality conditions, monitoring, regulatory considerations, and management approaches is provided in Chapter 3.

Climate

The reliability of a given water supply system can be influenced by climatic factors generally through seasonal precipitation and runoff. Climate change is altering the fundamental sources of the City's surface water supplies, specifically the precipitation type and amount, runoff patterns, water quality implications, and soil moisture content within watersheds. Warming is a consistent signal across future climate scenarios, directly affecting whether precipitation falls as rain or snow and accelerating snowmelt timing. The City addresses these risks through an intentional focus on climate resiliency and supply redundancy as discussed in Chapter 3.

Previously, the City addressed infrastructure reliability issues brought on by reduced flows on the Sacramento River by installing Vortex protector cages and pump vibration monitoring

technology with early warning systems at both the SRWTP and the EAFWTP in 2015, and conducted water quality evaluations assessing the potential influence of water temperature, lower river flows, and higher mean residence time on the City's source conditions. The City is also updating critical infrastructure through new raw-water intakes, ozone treatment to address changing river water quality, safer disinfection processes, and transmission improvements designed to maintain operational reliability under changing hydrologic conditions.¹³²

5.2.2. Long Term Service Reliability

Long-term service reliability reflects the recommended 25-year planning horizon anticipating a normal, single dry, and five consecutive dry years from 2025 through 2050. During base years, the City primarily relies on surface water from the Sacramento River and American River, with some use of groundwater.

Normal and Single Dry Conditions 2030–2050

The City's future water supplies in normal and single dry conditions reflect the same hydrological and regulatory criteria described in previous sections. As described in the 2020 UWMP, the year 1977 is used to represent the Single Dry Year condition for the Sacramento Valley, reflecting the period of lowest water supply availability. Furthermore, the year 2005 represents a Normal Year, reflecting typical conditions when the City's combined water supply sources are available to meet demands.

In Normal Years, supplies are generally constrained only by their express limiting features, for instance, the limitations presented in the USBR Operating Contract. Most notably, the City's base Normal Year reflects the impacts of limited American River diversions at the EAFWTP during Hodge Flow Conditions. During a single dry year, referred to as a Conference Year, diversions from the American River are further limited at the EAFWTP, with a maximum diversion quantity of 50,000 AFY. However, both during Normal and Single Dry years, two of the City's American River entitlements may be diverted downstream at the SRWTP. Hodge Flow Conditions are discussed extensively in Chapter 3. Overall, future water supplies remain relatively constant as average demands grow over time.

As previously discussed, demands during both normal and dry conditions through 2050 tend to reflect typical anticipated uses. Future water demands are generally predicted to increase as land uses and populations grow within and around the City.

¹³² Water+ Treatment Plants Resiliency and Improvements Project Final Draft Environmental Impact Report, Chapter 1.2: Summary of Proposed Project

Table 5-2 shows the Normal and Single Dry year supplies and demands on an annual timestep from 2030 through 2050, demonstrating that supplies are sufficient to support both retail and wholesale projected demands.

Supply availability is anticipated to include the Maximum Combined Diversion specified for the year of surface water per the USBR Operating Contract, as well as 35,864 AF of groundwater and 1,000 AF of recycled water. In Single Dry Year conditions, the City's supply availability remains the same with the exception of groundwater, reflecting an increased availability of 47,690 AF. Although not reflected in the City's retail Single Dry Year conditions, the City may implement demand management measures during drier periods to support statewide conditions.

TABLE 5-2: RETAIL NORMAL AND SINGLE DRY YEAR WATER SUPPLY AND DEMAND THROUGH 2050 (ACRE- FEET PER YEAR)

Normal Year	2030	2035	2040	2045	2050
Supply	363,664	363,664	363,664	363,664	363,664
Demand	111,228	120,582	129,935	136,950	143,965
Difference	252,436	243,082	233,729	226,714	219,699
Single Dry Year	2030	2035	2040	2045	2050
Supply	375,490	375,490	375,490	375,490	375,490
Demand	111,228	120,582	129,935	136,950	143,965
Difference	264,262	254,908	245,555	238,540	231,525

The City's wholesale water supplies are strategically managed to fully meet wholesale demands and are delivered under the City's existing water entitlements. Each wholesale agreement includes provisions that account for differing water year types. More details on projected wholesale water supply are presented in Chapter 4.

TABLE 5-3: WHOLESALE NORMAL AND SINGLE DRY YEAR WATER SUPPLY AND DEMAND THROUGH 2050 (ACRE-FEET PER YEAR)

Normal Year	2030	2035	2040	2045	2050
Supply	63,248	64,878	66,653	68,442	71,187
Demand	63,248	64,878	66,653	68,442	71,187
Difference	0	0	0	0	0
Single Dry Year	2030	2035	2040	2045	2050
Supply	63,248	64,878	66,653	68,442	71,187
Demand	63,248	64,878	66,653	68,442	71,187
Difference	0	0	0	0	0

Five Consecutive Dry Years 2030–2050

The City defines five consecutive dry years as conditions in which the City is faced with those similar to a low average water supply for five consecutive years occurring historically since 1903. This five-year period is modeled after dry-year conditions experienced between 1929 and 1933, identified as a representative baseline in the 2020 UWMP, and again in this 2025 UWMP.

Demands for five consecutive dry years consider historical trends in water usage during drought conditions by the City’s customers, such as increased outdoor irrigation during dry conditions. As droughts persist, however, demands may decline as the realistic constraints on supply availability are realized at the customer level. To conservatively ensure supplies are available to meet projected demands, the fluctuating demand pattern is not reflected in this future reliability assessment. The gradual increase in demands also accounts for reasonable water conservation measures resulting from improved efficiencies in indoor fixtures, management of outdoor landscape irrigation, and a general awareness of the value of long-term water conservation at the consumer level. In addition, the future dry conditions reflect increased land use and populations that would rely upon available supplies.

During these five consecutive dry years, supply availability is anticipated to include the Maximum Combined Diversion specified for the year of surface water, varying quantities of groundwater, as well as 1,000 AF of recycled water produced by Sacramento Area Sewer District, used in lieu of City surface water.

Table 5-4 and **Table 5-5** below show the City’s annual retail and wholesale supply and demand conditions in five consecutive dry years from 2030 through 2050.

TABLE 5-4: RETAIL FIVE CONSECUTIVE DRY YEARS WATER SUPPLY AND DEMAND THROUGH 2050 (ACRE-FEET PER YEAR)

		2030	2035	2040	2045	2050
Year 1	Supply	375,490	375,490	375,490	375,490	375,490
	Demand	111,228	120,582	129,935	136,950	143,965
	Difference	264,262	254,908	245,555	238,540	231,525
Year 2	Supply	375,490	375,490	375,490	375,490	375,490
	Demand	111,228	120,582	129,935	136,950	143,965
	Difference	264,262	254,908	245,555	238,540	231,525
Year 3	Supply	409,090	409,090	409,090	409,090	409,090
	Demand	111,228	120,582	129,935	136,950	143,965
	Difference	297,862	288,508	279,155	272,140	265,125
Year 4	Supply	409,090	409,090	409,090	409,090	409,090
	Demand	111,228	120,582	129,935	136,950	143,965
	Difference	297,862	288,508	279,155	272,140	265,125
Year 5	Supply	409,090	409,090	409,090	409,090	409,090
	Demand	111,228	120,582	129,935	136,950	143,965
	Difference	297,862	288,508	279,155	272,140	265,125

TABLE 5-5: WHOLESALE FIVE CONSECUTIVE DRY YEARS WATER SUPPLY AND DEMAND THROUGH 2050 (ACRE-FEET PER YEAR)

		2030	2035	2040	2045	2050
Year 1	Supply	63,248	64,878	66,653	68,442	71,187
	Demand	63,248	64,878	66,653	68,442	71,187
	Difference	0	0	0	0	0
Year 2	Supply	63,248	64,878	66,653	68,442	71,187
	Demand	63,248	64,878	66,653	68,442	71,187
	Difference	0	0	0	0	0
Year 3	Supply	63,248	64,878	66,653	68,442	71,187
	Demand	63,248	64,878	66,653	68,442	71,187
	Difference	0	0	0	0	0
Year 4	Supply	63,248	64,878	66,653	68,442	71,187
	Demand	63,248	64,878	66,653	68,442	71,187
	Difference	0	0	0	0	0
Year 5	Supply	63,248	64,878	66,653	68,442	71,187
	Demand	63,248	64,878	66,653	68,442	71,187
	Difference	0	0	0	0	0

5.3. Annual Reliability Assessment

Each year, the City considers current supply and demand conditions and performs an annual water supply and demand assessment (AWSDA) pursuant to California Water Code §10632.1 to evaluate real time or near-term circumstances that are different than the DRA scenario. This assessment evaluates actual current water supply and use conditions for a prescribed 12-month forecast (July through the following June). Procedures for conducting the Annual Assessment are contained in the City's Water Shortage Contingency Plan. The City has historically conducted the assessment as required by the California Water Code and will continue this planning exercise to provide a reliability assessment for then-current conditions regarding supplies and expected (unconstrained) demands.

5.4. Water Supply Reliability Summary

As presented in Chapters 3 and 4, the City of Sacramento has a diverse and robust water supply portfolio capable of meeting the water demands in its service area in normal, single dry, and five consecutive dry years from 2025 through 2050 with active management of its supply portfolio. The City's diverse water supply portfolio requires coordinated water management to render the supply reliable in all year types through 2050.

Chapter 6

Water Shortage Contingency Plan

A water shortage may occur due to a number of reasons, such as population growth, climate change, drought, and catastrophic events. Drought, regulatory action constraints, and natural and manmade disasters may occur at any time. A water shortage means that the water supply available is insufficient to meet the normally expected customer water use at a given point in time. A WSCP presents how an urban water supplier plans to act in response to an actual water shortage condition. This WSCP describes the City’s strategy for allocating water during such water supply shortages, while assuring customers that it will meet the minimum health and safety requirements of a drinking water purveyor.

In 2018, the Legislature enacted two policy bills, SB 606 (Hertzberg) and AB 1668 (Friedman), (2018 Water Conservation Legislation), which set new requirements for water shortage contingency planning. The City has updated its WSCP to meet the new requirements. As required by Water Code Section 10632 this WSCP is incorporated into the UWMP, yet it is also a stand-alone plan that is adopted independently from the UWMP and may be amended or refined and readopted over coming months and years as needed (see subsection 6.9 Plan Adoption, Submittal, and Availability, below).

The City has enacted Chapter 13.04 of the City of Sacramento Municipal Code to address water shortages.¹³³ These local rules were developed to help manage water shortage conditions in the event of drought, catastrophic outage, or regulatory mandate requiring statewide reduction in water use.

Table 6-1 shows the water shortage actions taken since 2014. Most recently, during the 2020–2022 drought, the City Council adopted Resolution No. 2021-0270 on August 24, 2021, declaring Stage 2 (Water Alert) under the City’s Water Shortage Contingency Plan. This action requested a 15 percent voluntary reduction in water use by residents and City operations and aligned the City’s drought response with State emergency proclamations and regional actions coordinated through the Regional Water Authority.

¹³³ Article XI. Outdoor Water Conservation, Chapter 13.04, City of Sacramento Municipal Code.

TABLE 6-1: WATER SHORTAGE RESOLUTIONS AND STAGES, 2014 - 2025

Resolution No.	Adoption Date	Water Shortage Stage	Description / Action
2014-0018	January 14, 2014	Stage 2 – Water Alert	Initial declaration of a City water shortage during the 2012–2016 drought, implementing Stage 2 of the City’s Water Shortage Contingency Plan and associated conservation measures.
2014-0209	June 17, 2014	Stage 2 – Continuing Water Shortage	Declared a continuing water shortage and implemented additional water conservation restrictions to achieve a 20 percent or greater reduction in water use, pursuant to Sacramento City Code §13.04.910.
2015 (EO B-29-15 Response)	June 2, 2015	Stage 2 – Continuing Water Shortage	Declared a continuing water shortage and adopted additional conservation measures in response to Governor Brown’s Executive Order B-29-15 and State Water Resources Control Board emergency regulations.
2021-0270	August 24, 2021	Stage 2 – Water Alert	Declared Stage 2 Water Alert under the City’s WSCP, requested a 15 percent voluntary reduction in water use, and aligned City actions with State drought emergency proclamations and Regional Water Authority resolutions.

The City’s updated WSCP is provided in Appendix A and is summarized in this chapter.

6.1. Water Supply Reliability Analysis

Chapters 3 and 5 of the City’s 2025 UWMP present the City’s water supply sources and reliability, respectively. Findings show that the City will have enough supply with its current water supply sources to meet increased retail and wholesale demands for both a near-term (within the next 5 years) and long-term (within the next 25 years) timeframe.

Statewide water supply conditions, changes in groundwater levels, subsidence, and actions by surrounding agencies may impact the City’s available water supply. For the City, a water shortage condition occurs when the supply of potable water available cannot meet ordinary water demands for human consumption, sanitation, fire protection, and other beneficial uses. The City may be able to foresee its water shortage condition in some cases; however, in other cases, the water shortage may be caused by an unforeseen sudden or emergency event. In general, the City’s water supply conditions may be affected by the following issues:

- Intake structure issues on the Sacramento or American Rivers,
- Diversion limitations from Sacramento or American Rivers (e.g., regulatory restrictions or reduced flows during drought conditions)
- Reduced surface water availability due to extended drought or critically dry hydrologic conditions

- Operational and/or water quality issues at the City's SRWTP or EAFWTP
- Groundwater well production reduction and/or impacts from water quality issues

Annually, the City determines the expected purchased water and surface water supplies availability for foreseeable water shortages. In other cases, the City may experience unforeseen water shortages when catastrophic interruption of water supplies occurs due to regional power outage, an earthquake, or other potential emergency events.

The City conducts an annual water supply and demand assessment in accordance with its WSCP. The analysis associated with this WSCP was developed in the context of the City's water supply sources and reliability.

6.2. City Water Shortage Contingency Plan

The City's WSCP is included in this UWMP as Appendix A. The City's WSCP is focused on its direct retail customers. The City does not have a separate WSCP specific to its wholesale customers. Each of the City's wholesale customers maintain their own WSCPs which will be reported in their respective UWMPs. The City's Wholesale agreements address the individual availability of wholesale water to each customer based on restrictions to the City's American River water rights.

The City's WSCP describes its strategic plan in preparation for and responses to water shortages. The WSCP includes:

1. A description of the City's teams responsible for internal decision making and implementation of its water shortage stages and associated response actions in the event of a water supply shortage;
2. Procedure for Annual Water Supply and Demand Assessment (AWSDA);
3. Water use reduction plans and stages of implementation;
4. Response actions for emergency conditions;
5. Mandatory water use prohibitions and restrictions;
6. Enforcement and penalties; and,
7. Water use monitoring, enforcement, and compliance.

Below, the City's legal authorities, communication protocols, compliance and enforcement, and monitoring and reporting are presented. Sacramento City Code (SCC) Title 13 Public Services, Chapter 13.04 Water Service System supports the City's WSCP actions.

The City's WSCP has been updated so that it is consistent with the 2018 Water Conservation Legislation requirements.

The City intends for its WSCP to be an adaptive management plan so that it may assess response action effectiveness and adapt to foreseeable and unforeseeable events. It may also be updated to conform to State legislative and regulatory requirements. The City's WSCP is included as Appendix A so that it may be updated outside of the UWMP preparation process.

When an update to the WSCP is proposed, the revised WSCP will undergo the process described in Section 6.9 for adoption by the City Council and distribution to the City, its customers, and the general public.

6.3. Annual Water Supply and Demand Assessment Procedures

The City's Annual Water Supply and Demand Assessment (AWSDA) is to be submitted to the California Department of Water Resources (DWR) by July 1 each year. The Annual Assessment examines the City's anticipated water reliability for the current year and one additional dry year. The Annual Assessment will be prepared at the beginning of each calendar year to evaluate near-term water supply reliability and determine what, if any, water shortage stages may be triggered during the required period. The Annual Assessment will be used by City decision-makers to prepare for and initiate implementation of any needed response actions, as well as to inform customers, the general public, interested parties, and local, regional, and state governmental entities to prepare for such required actions.

In preparing its Annual Assessment, the City compiles all of its data, uses the data to make water use and supply projections, and summarizes these projections into a formal Annual Assessment document. Key data incorporated into the Annual Assessment includes estimates for all water sources on a monthly basis and anticipated customer demand and actual water use on a monthly basis. The City will submit its Annual Assessment to the DWR no later than July 1 each year.

6.4. Six Standard Water Shortage Stages

To provide a consistent regional and statewide approach to conveying the relative severity of water supply shortage conditions, the 2018 Water Conservation Legislation mandates that water suppliers plan for six standard water shortage levels that correspond to progressive ranges of up to 10, 20, 30, 40, 50 percent, and greater than 50 percent shortages from the normal reliability condition. Each shortage condition should correspond to additional actions water suppliers would implement to meet the severity of the impending shortages.

In **Table 6-2**, the City's water shortage stages and corresponding water shortage level conditions are identified. The City's water shortage stages apply to both foreseeable and unforeseeable water supply shortage conditions. Water shortage is the gap between available supply and planned demands.

As described in Appendix A, the City will conduct an AWSDA to determine its water supply condition for the current year and the subsequent year, assuming it is a dry year. The preparation of AWSDA helps the City ascertain the need to declare a water shortage emergency and water shortage stage. In other cases, the City may need to declare a water shortage emergency due to unforeseen water supply interruptions. When the City anticipates or identifies that water supplies may not be adequate to meet the normal water supply needs of its customers, the City Council may determine that a water shortage exists and consider a resolution to declare a water shortage emergency and associated stage. The shortage stage provides direction on shortage response actions.

TABLE 6-2: WATER SHORTAGE CONTINGENCY PLAN LEVELS

Stage	Water Conservation Savings Goal	City Actions Required	Internal/External Customer Actions
Stage 1 (Up to 10%)	Up to 10% reduction in water use	• Restrict/cease internal city irrigation • Preventative maintenance restrictions • Cease non-essential water usage	• Reduce departmental water use
Stage 2 (Up to 20%)	10-20% reduction in water use	• Public information campaign • Water waste patrols • Customer watering restrictions	• Reduce consumption by 10-20% • Comply with watering restrictions
Stage 3 (Up to 30%)	Up to 30% reduction in water use	• Intensify public education • Consider drought surcharge • Further limit watering hours	• Further reduce outdoor watering • Adhere to limited watering hours
Stage 4 (Up to 40%)	Up to 40% reduction in water use	• Vigorous public information campaign • Limit outdoor irrigation to 1 day/week	• Manual application only • 1 day per week outdoor watering
Stage 5 (Up to 50%)	Up to 50% reduction in water use	• Eliminate turf watering • Eliminate median strip watering	• No turf or median watering • Significant water use reduction
Stage 6 (>50%)	Greater than 50% reduction in water use	• Restrict water use to health and safety purposes only	• Water use for health/safety only • Maximum conservation measures

6.5. Shortage Response Actions

CWC §10632 (a)(4) requires shortage response actions that align with the defined shortage levels. The City's shortage response actions consist of a combination of demand reduction,

supply augmentation, and operational changes. The City's suite of response actions are dependent on the event that precipitates a water shortage stage, the time of the year the event occurs, the water supply sources available, and the condition of its water system infrastructure.

The shortage response actions discussed below may be considered as tools that allow the City to respond to water shortage conditions. Because the City may continuously monitor and adjust its response actions to reasonably equate demands with available supply, the extent to which the gap between water supplies and water demand will be reduced by implementation of each action is difficult to quantify and is provided as an estimate. Certain response actions, such as public outreach and enforcement, support the effectiveness of other response actions and do not have a quantifiable effect on their own.

6.5.1. Demand Reduction

During water shortage conditions, the City plans to close the gap between water supply and water demand by implementing demand reduction action categories shown in **Table 6-3**. The shortage stage level for which each demand reduction action will commence implementation is also provided, along with the estimate of extent that the action will reduce the shortage gap. The table also indicates if the City plans to use compliance actions such as penalties, charges, or other enforcement actions for each demand reduction action.

Demand reduction actions are further detailed in Appendix A, Table 2.

TABLE 6-3: WATER SHORTAGE CONTINGENCY PLAN DEMAND REDUCTION ACTIONS (DWR TABLE 8-2)

Shortage Level	Demand Reduction Action	Estimated Reduction	Explanation/Reference	Enforcement (Y/N)
1	Landscape – Other landscape restriction or prohibition	2–10%	Parks/streetscapes reduce irrigation	No
1	Other	0–1%	Preventive maintenance restrictions (less flushing/street sweeping)	No
1	Other	0–1%	Cease non-essential City program water use	No
1	Other	0–1%	Accelerated leak repair to reduce system loss	No
2	Expand public information campaign	10–20%	Initiated at Stage 2	Yes
2	Landscape – Limit irrigation schedule	5–10%	Limit parks/cemeteries irrigation schedule on designated days	Yes
2	Landscape – Limit irrigation to specific days	0–1%	Restrict residential car washing to watering day	Yes

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Shortage Level	Demand Reduction Action	Estimated Reduction	Explanation/Reference	Enforcement (Y/N)
2	Increase water waste patrols	0–1%	Patrol expansion	Yes
2	Other	0–1%	Reduce flushing/street sweeping	No
2	Water features – Restrict non-recirculating decorative fountains	0–1%	Shut off non-recirculating ornamental fountains (except habitat)	No
2	Reduce system water loss	0–1%	Enforce hydrant regulations	Yes
2	Reduce system water loss	0–1%	Intensify leak detection & repair	Yes
2	Reduce system water loss	0–5%	AMI leak reports + repair assistance	Yes
3	Expand public information campaign	~10%	Intensified outreach	Yes
3+	Drought rate structure/surcharge	5–30%	Consider drought surcharge	Yes
3	Landscape – Limit irrigation to specific times	8–10%	Parks/cemeteries irrigated only at specific hours	Yes
3	Landscape – Limit irrigation to specific times	0–2%	Residential watering limited to set hours	Yes
3	Decrease line flushing	0–1%	Main flushing for emergencies only	Yes
3	Water features – Restrict fountains	0–1%	Shut off fountains (except habitat)	Yes
3	Reduce system water loss	1–4%	Leak notifications & detection	Yes
3	Other	0–1%	Car washing with buckets only	Yes
3	Other	0–1%	Encourage pool covers	Yes
4	Reduce system water loss	Not specified	Intensify leak detection/water loss program	Yes
4	Increase water waste patrols	Not specified	Expanded staff/patrols (nights, weekends)	Yes
4	Landscape – Limit irrigation to specific times	5–20%	1-day/week watering restriction	Yes
4	Other – Mandatory leak repair	0–1%	Leaks must be fixed within 5 days	Yes
4	Other – Pool/recreation feature restriction	0–1%	Cease all pool/spa maintenance	Yes
4	Other	2–5%	Limit public water use to health/safety only	Yes
4	Other	0–1%	No car washing	Yes
5	Landscape – Prohibit certain irrigation	0–50%	No turf/median irrigation; reduce parks/cemeteries	Yes
5	Other	5–10%	Limit public water use to health/safety only	Yes
6	Other	Not quantifiable	Required health/safety use only	Yes

6.5.2. Additional Mandatory Restrictions

When the City declares a water shortage emergency, it also adopts mandatory water use restrictions by resolution. In addition to the above-presented demand reduction response actions, the City may implement mandatory water restrictions set forth in Appendix A. Further, in accordance with SCC §13.04.910, the City will suspend the requirement in its Planning and Development Code to plant or irrigate trees, shrubs, or other groundcover during a declaration of water shortage.

These restrictions are in addition to State-mandated prohibitions.

6.5.3. Supply Augmentation and Other Actions

The City's water supply portfolio consists of surface water from the Sacramento and American Rivers and groundwater from the North American Subbasin and South American Subbasin, as described in Chapter 3 of the City's 2025 UWMP. At any water shortage stage and depending on the water shortage event, the City's water supplies will be used to complement each other and provide resiliency as aligned with the City's Climate Adaptation and Watershed Resilience Plan.

When surface water supplies are reduced or constrained on the Sacramento River, the City plans to use surface water from the American River, and vice versa, providing for resiliency between watersheds consistent with the City's watershed resilience management approach. Should surface become unavailable, the City plans to use its groundwater wells to pump groundwater to meet water demands to meet the health and safety needs of its customers. The City has made, and continues to make, significant investments in the groundwater wells. The City maintains groundwater production capacity from wells in the North American and South American Subbasins that are connected to the potable water system. Permitted groundwater production capacity is approximately 20 MGD, although available day-to-day capacity varies based on factors such as well maintenance, groundwater banking objectives, evolving water quality requirements, and operational policies that guide conjunctive use. The City continues to evaluate and plan for future groundwater system improvements and capacity enhancements through its planning and environmental review processes.

The City may also opt to implement emergency exchanges with other agencies. The City has multiple interties with its wholesale customers. In addition to the wholesale agreements with these agencies, the City has entered into mutual aid agreements with SSWD and SCWA. These mutual aid agreements allow the City to purchase non-firm water supplies during emergency periods. The City may purchase up to 20 MGD of emergency non-firm supply from SSWD, and up to 8 MGD of emergency non-firm supply from SCWA. The City also has

approximately 20 additional unmetered emergency connections to SCWA, Cal-Am Water, SSWD, and Florin County Water Agency. These consist of locked, closed valves on 6- to 12-inch diameter water mains. There is not a current estimate for the capacity of these emergency mutual aid connections, but they are not considered a significant supply source.

Should the City's water supply portfolio be insufficient to meet the reduced demands of its customers, the City may augment its water supply through its emergency interties with other agencies and take other actions as summarized in **Table 6-3**. The shortage stage level for which each action will commence implementation is provided, along with the estimated extent that the action will reduce the shortage gap. Details regarding operational changes in response to water shortage are provided in Appendix A.

TABLE 6-4: SUPPLY AUGMENTATION AND OTHER ACTIONS

Submittal Table 8-2 Wholesale: Supply Augmentation and Other Actions Water Code Section 10632(a)(4)(A),(C) and (E)				
	Is the Supplier completing this table using the standard six levels? (yes/no)			
Shortage Level	Supply Augmentation Methods and Other Actions by Water Supplier Drop down list These are the only categories that will be accepted by the WUEdata online submittal tool	How much is this going to reduce the shortage gap?		Additional Explanation or Reference (OPTIONAL)
		Volume or Percentage Drop down	Shortage Gap Reduction Value (May be a range)	
Add additional rows as needed				
5	Exchanges	Volume	20 mgd	SSWD - emergency non-firm supply
5	Exchanges	Volume	8 mgd	SCWA - emergency non-firm supply
6	Transfers	Volume	Up to shortage gap	Coordinate with other agencies
DWR NOTES: Units of measure (AF, CCF, MG) must remain consistent throughout the UWMP as reported in Submittal Table 2-3.				
NOTES: Refer to the City's WSCP for more detail on the actions taken at each declared water shortage level. It should be noted that the actions at each stage are cumulative. For example, if Shortage Level 3 is declared, then the actions at Shortage level 2 and 2 shall still be implemented.				

6.6. Seismic Risk Assessment and Mitigation Plan

CWC §10632.5(a) requires that the UWMP include a seismic risk assessment and mitigation plan to assess the vulnerability of the City's water system and mitigate those vulnerabilities. The City participated in the development of the 2021 Multi-Jurisdictional Local Hazard Mitigation Plan (LHMP) led by Sacramento County. The LHMP addressed seismic risk, and is incorporated into this UWMP by reference. The LHMP was adopted by the County on November 16, 2021 and submitted to the Federal Emergency Management Agency, which found it in conformance with Title 44 Code of Federal Regulations Part 201.6 Local Mitigation Plans. The County's LHMP is updated periodically, and reports are provided through the Sacramento County website.

The LHMP considered the risk of the region to earthquakes. The LHMP indicated that no major active faults transect the County, however there are historically active faults in the vicinity of Sacramento County as near as Bethel Island in the Delta, and to the east in the Sierra Nevada foothills.¹³⁴ Section F.5.3 of the LHMP provides a discussion of the hazard to the County. A Hazus earthquake analysis was performed on a countywide basis. This can be found in Section 4.3.9 of the LHMP Base Plan. No major earthquakes have been recorded within the County, although ground shaking from earthquakes with epicenters elsewhere have been felt. The Uniform California Earthquake Rupture Forecast (UCERF III) model indicates that Sacramento County has a low to moderate risk of earthquake occurrence, which coincides with the likelihood of future occurrence rating of occasional.

In accordance with America’s Water Infrastructure Act (AWIA), the City completed a Risk and Resilience Assessment (RRA) of its water system in September 2020 and updated the RRA in 2025. The RRA systematically evaluated the City’s assets, threats, and risks, and evaluated countermeasures that might be implemented to minimize overall risk to the system. Vulnerability to natural hazards, including earthquakes, was assessed based on its level of preparation/resilience, active response capability, and ability to recover. **Table 6.5** summarizes the earthquake risk estimation based on earthquake magnitude from the City’s 2025 RRA.

TABLE 6-5: RRA EARTHQUAKE RISK ESTIMATION

Table 7-2. Earthquake Risk Estimation – Supporting Likelihood and Vulnerability Values
Former Seismic Zone 3: Use earthquakes between 6.0 (where significant damage potentially starts) and >7.5 (highest reasonable) magnitude

Earthquake Magnitude	Probability of Exceeding ^a	Recurrence Interval Based on 50 years	Probability of Occurrence (incidents/year)	Vulnerability ^b	Net Threat Likelihood
6	0.4	125	0.008	30%	0.005
6.5	0.15	333	0.003	60%	0.001
7	0.1	500	0.002	80%	0.0018
7.5	0.01	5000	0.0002	100%	0.0002

^a Online USGS earthquake probability data for Sacramento before discontinuation of Seismic Zone system; consistent with 2014 VA (DOU 2014)

^b AWWA (2021), Table G-2 (p. 86)

To ensure the security of the City water system, the RRA is retained by the City as a confidential document.

¹³⁴ Sacramento County Local Hazard Mitigation Plan Update, September 2021 at Annex F-89-90.

6.7. Legal Authorities

CWC Chapter 3 Division 1, Section 350 requires the following:

...The governing body of a distributor of a public water supply...shall declare a water shortage emergency condition to prevail within the area served by such distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

When a water shortage is determined, the City will coordinate interdepartmentally and with the County for the possible proclamation of a local emergency in accordance with under California Government Code – California Emergency Services Act (Article 2, Section 8558).

In accordance with SCC §13.04.910, the City Council may, by resolution, declare the existence of a water shortage emergency and impose regulations and restrictions to be enforced in response to the shortage.

SCC Chapter 13.04, Article XI (Appendix K) presents the City's legal authorities to enforce shortage actions. Article XI prohibits water waste and provides water use restrictions. It also includes SCC §13.04.890, which outlines enforcement actions for violations to the City's water use restrictions.

6.8. Financial Consequences of WSCP

The UWMPA requires an analysis of the impacts of implementation of this WSCP and likely financial consequences to the City. This section addresses aspects of revenue reduction, expense increases, and additional costs that may arise, and identifies financial response actions.

6.8.1. Revenue and Expenditure Impacts

The City has established water rates that support its on-going operation and maintenance activities, as well as the capital projects required to provide a safe and reliable water supply to its customers. Water rates are tied to the City's customers' normal water consumption activities, with this portion of revenue derived from volumetric (usage-based) charges. While the majority of the City's water utility costs are fixed, a reduction in water demand results in a disproportionate reduction in revenue available to support those fixed costs. Thus, in times of shortage, there will be revenue reductions to the City.

The City estimates the impact to a one-time reduction in water demand in Fiscal Year 2027 under the rates in effect at the writing of this WSCP would be as shown in **Table 6-6**. Actual impacts may vary depending on customer class, service type, and future rate structure.

TABLE 6-6: ONE-TIME DEMAND REDUCTION LOSS OF REVENUE ESTIMATES

Percent Reduction in Demand	Percent Loss of Revenue
10%	3.6%
20%	7.3%
30%	10.9%
40%	14.5%
50%	18.1%

In addition to the revenue reductions, the City will also experience an increase in expenses resulting from augmented communication actions, increased enforcement activities, and the administration of water shortage management actions identified in the WSCP. These costs may include expanded public outreach, customer service demands, compliance monitoring, and potential overtime and reassignment of existing staff.

When a drought or water shortage occurs, the City's costs increase due to the additional activities and duties of instituting a stage of action. Not only will there be costs for materials, and staff time, but the City may need to adjust staffing resources depending on the severity and duration of the shortage event.

To address both increased costs and reduced revenues, the City may implement financial response measures, such as drought surcharges or other temporary rate adjustments, particularly during more severe shortage stages (e.g., Stage 3 or higher). These measures are intended to help maintain the financial stability of the utility by recovering additional operational costs and offsetting revenue shortfalls associated with reduced water use.

Staff will regularly report the identified and anticipated revenue and expenditure impacts and recommend appropriate responses to the City Council.

6.9. WSCP Refinement Procedures

The City's WSCP is an adaptive management plan. It is subject to refinements as needed to ensure that the City's shortage response actions and mitigation strategies are effective and produce the desired results. Based on monitoring described in Appendix A, Section 12, and the frequency of compliance and enforcement actions described in Appendix A, Section 10, the City may adjust its response actions and may modify its WSCP. When a revised WSCP is proposed, the revised WSCP will undergo the process described in Section 6.9 for adoption by the City Council and distribution to the County, its customers, and the general public.

6.9.1. Systematic Monitoring

The City will monitor meters at its water sources to evaluate the overall effectiveness of its response actions in meeting the declared water shortage stage. Should overall demands not meet or exceed the goals of the declared water shortage stage, the intensity of public outreach for water conservation and the extent of enforcement of water use restrictions may be increased. Conversely, should overall demands continue to be substantially less than the goals of the declared water shortage stage, the intensity of public outreach for water conservation and the extent of enforcement of water use restrictions may be decreased.

6.9.2. Feedback from City Staff and Customers

Feedback from City staff and the public is important in refining or incorporating new actions. The City seeks input from staff who interface with customers to gauge the effectiveness of its response actions and for response action ideas.

Customer water meter data may be evaluated for each customer sector or each individual customer. The City tracks water use violations and may evaluate their frequency to determine restrictions that customers may not be able to meet. This evaluation may also show water demand reduction actions that customers may effectively implement.

The City seeks input from its customers and the general public through its website, through public hearings, and through regularly scheduled City Council meetings.

6.10. Special Water Feature Distinction

The City distinguishes special water features, such as decorative fountains and ponds, differently from pools and spas. Special water features are regulated separately. Regulations under SCC §13.04.870 prohibit the use of non-recirculated water in fountains or other decorative fountains.

6.11. Plan Adoption, Submittal, and Availability

This WSCP is adopted concurrently with the City's 2025 UWMP, by separate resolution. Prior to adoption, a duly noticed public hearing was conducted. A hard copy of the WSCP will be submitted to DWR within 30 days of adoption, along with an electronic copy.

No later than 30 days after submittal to DWR, copies of the WSCP will be available at the City's offices. A copy will also be provided to the County. An electronic copy of this 2025 UWMP, including the WSCP, will also be available for the public on the City's website.

Chapter 7

Conservation and Demand Management Measures

The City implements Demand Management Measures (“DMMs”) to sustainably manage its water resources. If not mitigated, an increase in water demand and/or changes in water supplies due to climate change and other factors reduce water reliability. The implementation of demand management measures can help improve water service reliability and will help meet City and State water conservation goals.

AB 2067, enacted in 2014, streamlined and updated the reporting requirements for DMMs. This legislation effectively shifted the focus from detailed descriptions of the original fourteen (14) DMMs, otherwise referred to as Best Management Practices, to key water conservation measures implemented to achieve SB X7-7 water use targets. This update resulted in a streamlining of the DMM reporting requirements:

Retail Agencies: reduced DMMs from 14 to 6 *specific measures*, plus an “other” category.

Wholesale Agencies: reduced to three *specific measures*, plus a narrative component for select programs.

The City serves as both a retail and wholesale water supply agency, thus employs a variety of DMMs tailored for the specific needs of its respective systems. This chapter characterizes the City’s historical and existing water conservation program, status of DMM implementation, and the City’s latest Water Efficiency and Conservation Plan (“WECP”).

7.1. Water Conservation Program Overview

The City of Sacramento has implemented a comprehensive, long-standing water conservation program designed to promote efficient water use, reduce potable demand, and strengthen long-term supply reliability. Through its Department of Utilities, the City combined regulatory measures – such as mandatory seasonal watering schedules and water waste enforcement – with financial incentives including rebates for high-efficiency fixtures, turf replacement, smart irrigation equipment, and leak repairs. The City also provides direct customer support through water-use metering tools, and no cost to customer water-efficiency services such as leak investigations or Water Wise House or Business Calls with a

member of its team. Public outreach campaigns and educational workshops further encourage drought-resilient landscaping and responsible water use. Together with regional coordination and long-range planning initiatives, these efforts position Sacramento to meet current demands while preparing for future growth, meeting regulatory requirements, and navigating climatic and hydrological variability.

To comply with California's Water Conservation Act of 2009 (SBX7-7), the City developed a Water Conservation Plan ("WCP") in 2013. The WCP served as a roadmap for the City and outlined implementable water conservation strategies to achieve its 2020 reduction targets while addressing climate change and promoting sustainable water use (discussed in Chapter 5). The implementation of the WCP's conservation measures proved highly successful and resulted in the City surpassing its 2020 per capita water use target of 225 GPCD. The City achieved an actual average per capita water use of 169 GPCD, well below the required conservation target and underscoring the success of the City's comprehensive water conservation program.

Building on its successful legacy water conservation program, Sacramento again partnered with Maddaus Water Management to craft an updated and comprehensive Water Efficiency and Conservation Plan (WECF). The latest WECF performed a scenario analysis of three prospective water conservation programs to determine the optimal water conservation plan for the City. Of the three strategies evaluated, Program B – a moderate, yet strategic expansion of existing conservation efforts – was selected. The details of Program B and its implications are discussed later on (Section 7.6.2).

7.2. Demand Management Measures for Retail Agencies

This sub-section describes the demand management measures ("DMMs") that form the foundation of Sacramento's water conservation program. These six particular DMMs represent adopted ordinances, policies, and long-standing budgeted conservation programs. California Water Code Section 10631 requires urban retail water agencies to provide a description of the following:

- Water Waste Prevention Ordinances
- Metering
- Conservation Pricing
- Public Education and Outreach
- Programs to assess and manage distribution system real loss
- Water conservation program coordination and staffing support

In addition to the six aforementioned DMMs, the City must also describe any other DMMs that it has implemented that have had significant impact on water use.

7.2.1. Water Waste Prevention Ordinances

The City prohibits water waste within its service area. The City first adopted a WSCP in 1992 to minimize non-essential uses of water and conserve remaining supplies to the greatest public benefit. In addition, the City Code (*Title 13 Public Services, Chapter 13.04 Water Service System, and Water Conservation*) defines water waste runoff and associated penalties for violations. The City Code can be amended when the City Council adopts an ordinance. A water conservation ordinance was adopted in December 2009. Over time, the City has amended its water conservation ordinance to meet its urban water use objectives. In 2017, City amended Chapter 13.04 to include water use efficiency requirements for outdoor water use under Outdoor Conservation of Water Ordinance 2017-0045 and, New Landscaping Ordinance 2017-0062 .

The City Council, by resolution, can declare the existence of a water shortage and adopt revised or additional water use prohibitions and consumption reduction methods above and beyond the existing City Code while the water shortage remains in effect. In 2021, following Governor Newsom’s State of Emergency Drought Proclamation, Sacramento declared a *Water Alert*, which increased fines for water waste, restricted car washing, and requested voluntary 15% reductions in water use. A *Water Alert* corresponds with Stage 2 of the City’s Six Stage Water Shortage Contingency Plan.

7.2.2. Metering

The City’s water system is fully metered, and ratepayers are billed based on service size, and their water usage through a volumetric rate structure. California Water Code Section 527 set a hard deadline for retailers to achieve fully metered systems by January 1, 2025. The City achieved this requirement ahead of the statutory requirement. A key feature of the City’s Meter Installation Program is its Advanced Metering Infrastructure (“AMI”), which provides real-time water use data to both the City and its ratepayers. This technology empowers ratepayers to make informed decisions about their water usage patterns given the near real-time data available through the Eye on Water Portal, while enabling the City to also proactively identify and notify ratepayers of potential leaks both through letters sent to customers and using the portal software application messaging features. The implementation of the automatic leak notification process and the resulting leak investigations are instrumental in reducing water loss and helping the City to continue to achieve its water efficiency objectives. The City estimates it sends approximately 25,000 leak alert letters per year. About 11% of customer accounts are signed up for the My Water tracking

portal and of those more than 50% have signed up for the leak alert feature. The City is encouraging broader participation to help minimize water waste.

Metered customers are billed for the volumetric amount of water that the customer uses. The City's volumetric rate structure transitioned customers away from flat rates to provide a financial incentive for water conservation.

7.2.3. Conservation Pricing

Historically, the City charged flat rates for water use. To encourage conservation, the City transitioned to a metered, volumetric billing system. Ratepayers typically switched from a flat rate to the new volumetric rate one year after meter installation. Nearly all ratepayers were metered by 2021. Volumetric rates, in effect since 2016, were designed to recover up to 70% of the City's operating costs through water sales. As meter data becomes more comprehensive, the City will reconsider further cost recouping mechanisms. This transition provides a direct financial incentive for ratepayers to use water more efficiently, which is expected to help the City achieve its overall water use objectives. The City periodically conducts rate studies in accordance with Proposition 218 with the next projected study to be completed in early 2027.

7.2.4. Public Education and Outreach

The City implements a comprehensive public education and outreach program to promote efficient water use and support long-term water conservation. Outreach efforts are designed to reach a broad audience of residents and businesses through a mix of digital communications, media campaigns, in-person engagement and customer-focused resources.

The City uses targeted marketing campaigns throughout the year to reinforce seasonal water-use behaviors, including watering schedules and available rebates for water-efficient landscape and irrigation upgrades. The City typically implements two campaigns per year, each representing an investment of approximately \$25,000 to \$30,000. During the 2020–2022 drought, the City spent a total of \$133,000 on four paid media campaigns to encourage customers to reduce water use. Campaigns are delivered through platforms such as social media, streaming audio and video, digital advertising and radio, and are designed to provide clear, actionable steps customers can take to reduce water use.

Educational content is also shared through the City's blog (Sacramento City Express) and Department of Utilities' customer newsletter (City Drop), which provide timely information on topics such as leak detection, irrigation efficiency and available rebates. Customers are encouraged to use the City's online water-use tracking tool (EyeOnWater) at no cost, which allows them to monitor consumption and set alerts for unusual or continuous use that may indicate leaks leveraging the AMI meter-based water data.

The City also conducts direct community outreach by hosting events, including the annual Water Wise Garden Showcase, the City's signature water conservation event, and Mulch Mayhem, an annual giveaway that provides no-cost-to-customer mulch. Along with additional classes, webinars and community events held throughout the year, these efforts provide hands-on guidance on water-wise landscaping, irrigation technology and available rebate programs that help offset the cost of water-efficient upgrades.

In addition, the City incorporates water conservation messaging into utility billing materials, including bill messages and inserts, to reach customers directly and consistently. Supplemental outreach materials, including a 2021 drought awareness flyer and 2022 rebate program flyers in English and Spanish, were also developed to reinforce these messages. These efforts highlight simple actions customers can take, such as adjusting irrigation schedules or taking advantage of rebate programs.

The City also promotes water conservation, education, and public awareness both independently and in coordination with the RWA, a joint powers authority formed in 2001 to promote collaboration on water management and water supply reliability programs in the Greater Sacramento Region. In collaboration with 17 water provider 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 install 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, and roughly a third went toward funding water efficiency in the City.

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 narrative of each RWA campaign between 2021 and 2025 and highlighted achievements.

2021 was a year for nimble messaging and maximum flexibility to adapt outreach to the rapidly changing conditions. RWA's Regional Water Efficiency Program (RWEF) 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 RWEF participants. The goals being to 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 businesses 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 (within the City limits) 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 significant engagement throughout the Sacramento Region:

- Television Advertising: 3,926 television advertisements; 23,212,700 impressions
- Streaming Video Advertising (Comcast, EyeQ, Hearst, Paramount Plus, & Premion): 3,532,621 advertisements; 3,532,621 impressions
- Radio Advertising: 5,273 radio advertisements; 19,994,200 impressions

- Digital Advertising (Facebook, Google Display Network & Spotify): 29,472,602 impressions; 297,870 clicks
- Billboard advertising: 2,037,102 digital advertisements; 62,807,653 impressions
- Public Service Announcements (Television and Radio): 24,248,000 impressions; \$683,400 in value had they been purchased as advertising
- Facebook: 60 posts per year

The Program continues to utilize the WEP public outreach website, BeWaterSmart.Info, and the “Be Water Smart” brand to reach customers throughout the region. The website 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).¹³⁵ 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, including the City, hosts an annual Mulch Mayhem event in which customers can pick up a truck load of no-cost mulch from selected locations throughout the region. Combined, these in person events are attended by thousands of people each year throughout the region.

¹³⁵ No public events were attended in 2021 and 2022 due to the COVID pandemic.

The Program provides a variety of “give-a-way” items to customers at in person public events and through direct mail requests from the 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 variety of high efficiency rebate options were provided including toilets, clothes washers and irrigation efficiencies (full summary in Table 7-1). 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.

TABLE 7-1: REGIONAL REBATES AND INSTALLATIONS FROM 2021 – 2025¹³⁶

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 Efficiencies 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 2012¹³⁷, 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 teachers and students with relevant facts and images to help them develop 30 second video Public Service Announcements (PSAs). The contest themes for 2022 and 2023

¹³⁶ For City of Sacramento-specific activity, see Appendix A – Water Efficiency and Conservation Plan, Chapter 4.

¹³⁷ The program did not host a Water Spots Video Contest in 2021 due to the COVID pandemic.

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 students receive cash prizes and the winning videos are played at Sutter Health Park 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 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 no-cost-to-customer 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) 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. Teachers reported increased water conservation knowledge and that students shared the information with their families.

Additionally, the City’s outreach efforts related to water use efficiency and water conservation have received awards from the EPA Water Sense Program, most recently in 2024 for educating its residents on water efficiency. Public outreach also remains a critical part of the City’s water conservation program. These strategies include school education programs, e-newsletters, and active communicating in local media outlets.

7.2.5. Assessing and Managing Distribution System Real Loss

The City actively manages water loss through a comprehensive system audit and leak detection program. This process quantifies “unaccounted-for-water” – the difference between water produced and consumed – which becomes more precise as the meter network expands. The program relies on both visual and audible inspections to locate leaks. Visual checks of system components like fire hydrants and valves identify obvious issues, while specialized electronic listening equipment is used to pinpoint the exact location of hidden leaks.

In line with this effort, the City performs annual water audits following the AWWA Method 36 and has made significant progress in reducing water loss by rehabilitating, repairing, and replacing aging infrastructure. This ongoing leak management program is a vital part of the City’s Water Conservation and Sustainability Plan, as it allows for quick repairs to minimize water loss. The City is also adhering to State water loss targets described in Chapter 4.

7.2.6. Water Conservation Program Coordination and Staffing Support

A Water Conservation Coordinator leads a designated staff (four water conservation specialists, one customer service representative, three water conservation representatives, one office administrator, and 1-2 interns) to actively develop, promote, enforce, and maintain water conservation programs.

7.3. Other Demand Measures

As previously discussed, AMI data supports water demand management by providing near real-time water use information that allows the City and its customers to closely track usage, identify leaks, and reduce water waste in a timely manner. It also supports behavioral water conservation by enabling targeted outreach and informed customer decision-making regarding water use efficiency.

In addition to the six aforementioned DMMs, the City also offers the following programs that provide integrated services and incentives for water conservation to City customers:

- Residential Water Wise Rebates
- Residential Water Services
- Business Water Wise Rebates
- Business Water Wise Services
- Water Wise Tools

7.3.1. Residential Conservation Programs

The City provides Water Wise rebates and services to its residential customers and promotes such services on its water conservation website. Implementation of Water Wise rebates and services is expected to reduce the amount of water consumed by its residential customers and help the City achieve its water use objectives.

Rebate Programs

Table 7-2 briefly summarizes and describes the rebate programs available to residential customers. The rebate programs are available to property owners, their tenants, commercial, industrial, institutional, and multi-family customers. All rebates are subject to review by water conservation staff and the terms and conditions outlined on the City's water conservation website: sacwaterwise.com. Some rebates may be combined with rebates from the Sacramento Municipal Utility District (SMUD). Detailed information on these rebate programs and metrics can be found in the WECP in Appendix C.

TABLE 7-2: CITY OF SACRAMENTO REBATE PROGRAMS AND SERVICES THROUGH 12/31/25

Program Category	Rebate/Service Program	Description
Indoor	No-cost-to-customer Discounted Showerheads	Provides no-cost-to-customer or discounted high-efficiency showerheads to help reduce indoor water use.
Indoor	High Efficiency Toilets	Rebate of up to \$125 for replacing pre-1992 toilets with high-efficiency models.
Indoor	High Efficiency Clothes Washers	Rebate of up to \$125 for clothes washers with a water factor of 3.7 or lower.
Indoor	AMI Leak Alerts, "Leak Free Sacramento", Leak Repair Assistance and Rebates	Programs that notify customers of potential leaks and provide assistance or rebates for repairs to reduce water loss.
Indoor	No-cost-to-customer Water Wise House Calls	No-cost consultations targeting customers using more than 55 gallons per person per day indoors or more than 500 gallons per day outdoors during summer to identify water savings opportunities.
Outdoor	Turfgrass Conversion	Rebate of up to \$3,000 for converting turf to water-efficient landscaping, calculated at \$1.50 per square foot; labor may be included.
Outdoor	Irrigation Upgrades	Rebate of up to \$400 for improvements to irrigation systems to increase efficiency; labor may be included.
Outdoor	Smart Irrigation Controllers	Rebate of up to \$400 for installation of weather-based or smart irrigation controllers; labor may be included.
Outdoor	Rain Barrels	Rebate of up to \$150 for rain barrels, calculated at \$0.75 per gallon of storage capacity.
Outdoor	Laundry-to-Landscape	Rebate of up to \$100 for materials used to redirect laundry water for landscape irrigation.

Residential Water Wise Services

The City offers a no-cost-to-customer residential water survey service known as the Water Wise House Call Program. Surveys are conducted by trained water conservation specialists who visit residences and review landscape and irrigation conditions in addition to evaluating indoor water use. After completing the review, the specialist informs the resident of flagged inefficiencies and provides information on how to improve overall water use efficiency. To schedule a Water Wise House Call, customers can call the City's conservation hotline.

This complimentary service aims to educate customers on the benefits of water efficiency while also lowering utility bills and promoting conservation.

7.3.2. Commercial Water Wise Business Calls

Similar to Water Wise House Calls for residential customers, the City offers Water Wise Business Calls for commercial customers. Site visits are conducted by trained water conservation specialists at no cost to the business. The water conservation specialists help identify potential water-savings for the business and identify rebates for which the business may be eligible. Businesses can call the City's conservation hotline (916-264-5011 or 311 from within the City) to schedule their site visit.

7.4. Demand Measures for Wholesale Agencies

California Water Code Section 10608.12 requires urban wholesale water suppliers to provide narrative descriptions of implemented DMMs. Wholesale agency DMMs focus on regional water efficiency, infrastructure management, and supporting retail agencies with an emphasis on long-term supply reliability. Such DMMs implemented by the City's wholesale system include:

- Metering
- Public education and outreach
- Water conservation program coordination and staffing support

Additionally, a narrative of the City's wholesale system's asset management and wholesale supplier assistance programs are required as well. For each DMM, the City's current program is described, followed by a description of the respective DMM and how it was implemented between 2021 and 2025.

7.4.1. Metering

The City's wholesale interties and water deliveries with other agencies are fully metered, and meter calibration is verified on an annual basis.¹³⁸ All facilities are fully equipped with SCADA and security alarms, and are maintained by City mechanical, electrical, and instrumentation staff. Maintenance is performed as warranted with the receiving wholesale customer.

7.4.2. Public Education and Outreach

The City actively participates in the Regional Water Authority's Water Efficiency Program Public Information Campaign. Of the RWA's 21 members, three are wholesale customers of Sacramento. Public education and outreach materials, prepared by the City, are available to its wholesale customers through the City's website. A full description of the City's participation in the RWA's public education and outreach initiatives is discussed in *Section 7.2.4*.

7.4.3. Water Conservation Program Coordination and Staff Support

Water Conservation Program Coordination and Staff Support for the wholesale system are conducted by the same staff that serves the retail system. The retail system's water conservation program and coordination and staff support is described in *Section 7.2.6*.

7.4.4. Asset Management

The City is addressing the challenges of an aging water system by implementing a proactive asset management program to guide its capital improvements. As critical infrastructure—including pipelines, reservoirs, and treatment plants—approaches or exceeds its design life, the need for systematic rehabilitation or replacement has become a high priority.

To ensure long-term infrastructure sustainability and a reliable water supply, the City's asset management strategy prioritizes rehabilitation and replacement projects based on a clear framework. This framework incorporates best practices such as long-range planning, life-cycle cost analysis, proactive operations and maintenance, and sustainable funding strategies for capital replacement. This strategic approach ensures that investments are made effectively to maintain system integrity and service quality.

7.4.5. Wholesale Supplier Assistance Programs

The City provides conservation assistance to its wholesale customers via participation in the RWA Water Efficiency Program Advisory Committee. The Committee meets monthly and the

¹³⁸ Emergency interties with other agencies are not fully metered.

City actively participates. Through this meeting, the Committee members provide water conservation program updates and coordinate on activities.

7.5. Urban Water Use Objectives

Urban Water Use Objectives (UWUO) are a critical tool in aligning the City's existing and future water use with California's conservation goals. These regulations, known as "Making Water Conservation a California Way of Life," shift the state from a one-size-fits-all approach to a more customizable framework based on the unique characteristics of each retailer's service area. UWUOs are effectively a water budget, where retailers must calculate their UWUO for the previous year and compare it to their actual water use. The UWUO is the summation of four efficiency budgets: (1) Indoor Residential; (2) Outdoor Residential; (3) Commercial, Industrial, and Institutional (CII) Landscapes; and (4) Water Loss. As a whole, retailers are granted flexibility and required only to meet the total, or aggregate, UWUO. While regulations are currently in effect, compliance has been deferred until 2027.

The UWUO must fall below the City's SB X7-7 target, otherwise the UWUO is capped at the SB X7-7 target. Sacramento currently is well below its SB X7-7 target (see Chapter 4).

Through implementation of permanent water waste ordinances, targeted indoor and outdoor conservation programs, advanced metering analytics, CII performance measures, and proactive water loss management, the City of Sacramento is currently meeting and is well positioned to continue meeting its Urban Water Use Objective targets as required under California's *Making Water Conservation a California Way of Life* regulation. The City's UWUO reports are available for review on the Department of Water Resources Water Use Efficiency Data (WUEdata) portal.¹³⁹

Residential Indoor Water Use Standard

The Residential Indoor Water Use component of the UWUO is calculated by multiplying the applicable gallons-per-capita-per-day ("GPCD") consumption standard by the City's service area population and by the number of days in the year. The GPCD standards utilized to calculate the Residential Indoor Water Use decrease over time, starting at 47 GPCD in 2025 and decreasing to 42 GPCD by 2030.

Residential Outdoor Water Use Standard

The City's Residential Outdoor Water Use Standard is calculated by multiplying the landscape efficiency factor ("LEF") by net evapotranspiration ("Net ETo") by the square footage of

¹³⁹ <https://wuedata.water.ca.gov/>

residential irrigable irrigated landscape area, and by a conversion factor of 0.62 that converts acre-inches per year to gallons per square foot per year.

Additionally, the City may include budgets for temporary provisions for residential outdoor use for planting of new trees and establishing qualifying landscapes. This temporarily increases the Residential Outdoor Water Use Standard for the year. This temporary action will require supporting information and needs to be submitted and approved by DWR.

Commercial Outdoor Water Use Standard

Like the Residential Outdoor Water Use Standard, the Commercial Outdoor Water Use Standard also utilizes landscape area measurements by the LEF, Net ETo, and conversion factor (0.62) when calculated.

Compliance with the Commercial Outdoor Water Use Standard is deferred until July 2028. Upon which, the City will calculate for accounts with dedicated irrigation meters (“DIMs”). Prior to this compliance deadline, suppliers’ Commercial, Industrial, and Institutional Dedicated Irrigation Meters (“CII-DIM”) water budgets will equate to the actual deliveries reported to SWRCB. Importantly, there is significant uncertainty in estimating future UWUOs prior to the release of CII-DIM landscape area measurements as this data accounts for a substantial component of the UWUO.

CII Mixed Use Meter Large Landscape Compliance

An additional water budget requirement is the conversion of large landscapes with mixed use meters (“MUMs”). MUMs are commercial, institutional, or industrial meters that record both indoor and outdoor water usage. Water budgets for large landscapes are to be calculated by multiplying the landscape area by net evapotranspiration by 0.63 and by a unit conversion factor of 0.62.

Water Loss Standard

The California Water Code §10608.34 required the State Water Resources Control Board (SWRCB) to develop water loss control and performance standards (Real Water Loss Standards) applicable to urban retail water suppliers. The resulting Real Water Loss Standard is 41.1 gallons per (active and inactive) service connection per day. More information on the Water Loss Standard can be found in Chapter 4 of this UWMP.

Bonus Incentive

A bonus incentive is available to suppliers that deliver potable reuse water produced at an existing facility. This incentive applies to the supplier’s UWUO and increases the UWUO budget for that year by up to 15%. The bonus incentive is calculated as the total volume of potable water delivered to residential accounts and CII landscapes with DIMs as a percentage of all potable water deliveries multiplied by the supplier’s individual potable reuse.

At this time, the City neither produces nor utilizes potable reuse water as part of its water supply portfolio. The bonus incentive is not applicable towards the City's UWUO.

7.6. Water Efficiency and Conservation Plan

The City engaged Maddaus Water Management to conduct an updated *Water Efficiency and Conservation Plan* in late 2024 and finalized the plan in April 2026. The WECP builds on the success of the original 2013 Water Conservation Plan and is designed to ensure compliance with the latest urban water use efficiency frameworks.¹⁴⁰ As part of its update to the City's water conservation program, the WECP offered three water conservation program scenarios to provide the City with options on how best to advance its water conservation objectives. Program A served as a baseline, with no change, the status quo. Program B outlined modest, yet strategic additions to the City's water conservation program while Program C was the most ambitious and consequently most expensive option. The WECP discussed the pros and cons of all three options and selected Program B as the optimal choice for the City. Program B, discussed in later sections, presents a tempered approach to the City's water conservation program without engaging in cost-prohibitive projects with marginal returns on costly upgrades.

7.6.1. Conservation Program Analysis

The WECP outlined the City's water conservation program successes to date. The following programs have been implemented by the City over the years to much success. As mentioned previously, ongoing conservation programs include:

- AMI Leak Alerts
- Leak Free Sacramento
- Leak Repair Assistance Rebate
- Turfgrass Conversion Rebates
- Smart Controller Rebates
- High Efficiency Toilet Rebates
- High Efficiency Clothes Washer Rebates
- Rain barrel and Greywater Rebates

Conservation Program Alternatives

Conservation program alternatives were designed to refresh the current program and help the City meet its water conservation objectives. Ultimately, the alternatives were designed to satisfy the regulatory requirements under the "*Making Water Conservation a California Way of Life.*" To ensure adaptability in its water conservation strategy, the City and Maddaus Water

¹⁴⁰ California Senate Bill 606 and Assembly Bill 1668.

Management developed three conservation program alternatives. Each alternative was built from modeled measures and tailored to a different level of anticipated water use. An overview of program alternatives is shown in **Figure 7-1**.

Program A – Current Program – includes only existing conservation activities, represents a continuation of the City’s ongoing efforts and serves as a baseline for comparison. Fundamentally, the current program, or status quo, is effective and resulted in considerable water savings over the years. The City has been a leader in water conservation, and the Current Program would continue to execute in a similar manner.

Program B – Optimized Program – includes all existing conservation activities covered by the *Current Program*, as well as new and enhanced measures with favorable benefit-cost-ratios and/or high savings potential. Represents a modification of existing conservation activities plus an expansion of the City’s overall conservation potential. Program B builds on the success of the Status Quo by optimizing current budget and staffing resources to focus on the most valued water savings, while not pursuing cost-prohibitive programs and projects. It provides a measured alternative for the City, should it decide to buildout its water conservation program further than present.

Program C – Expanded Program – enhances Program B by substituting current conservation measures with new and improved ones to maximize water savings. This proactive approach creates a large buffer between projected water use and the compliance threshold, mitigating risks from demand spikes or future UWUO requirements. However, Program C is significantly more expensive and staff intensive. While more expensive, Program C includes more individual measures on different implementation schedules, its per-unit savings are comparable to Program B. The variances in water savings and benefit-cost ratios (BCRs) between the programs are direct results of their distinct measures, budgets, and timelines as modeled in this plan’s DSS.

Program Scenarios

Measure Name	New	Program		
		A • Current	B • Optimized	C • Augmented
Single and Multifamily Residential Financial Incentives for Irrigation and Landscape Upgrades		✓		
Landscape Irrigation Restricted to Designated Days and Times		✓	✓	✓
Commercial and Large Landscape Financial Incentives for Irrigation and Landscape Upgrades		✓		
Outdoor Water Use Evaluations		✓		
Large Landscape Water Surveys		✓	✓	✓
Enhanced - Water Budgeting/Monitoring for Dedicated Irrigation Meters	◆		✓	✓
Partnership with Energy Utilities – Incentive		✓		
Residential Leak Repair Assistance Rebate		✓		
Leak Free Sacramento		✓		
System Water Loss		✓	✓	
Public Outreach & Education		✓	✓	✓
Indoor Water Surveys		✓		
Residential Plumber Initiated High Efficiency Toilet Retrofit Program	◆		✓	✓
Residential Clothes Washer Rebate		✓		✓
CII Customized Top Users Incentives	◆			✓
CII Water Savings Performance Program		✓	✓	✓
CII Rebates to Replace Inefficient Equipment		✓	✓	✓
Install High Efficiency Toilets, Urinals, and Showerheads in MF & CII Buildings	◆			✓
Enhanced - Residential Smart Landscape Rebates	◆		✓	✓
Commercial and Large Landscape Non-Functional Turf Enforcement	◆		✓	
Enhanced - Residential Leak Repair Assistance	◆		✓	✓
Enhanced - AMI Targeted Leak Free Sacramento	◆		✓	✓
Enhanced - Water & Energy Partnership Rebates	◆		✓	✓
Enhanced - Residential Water Surveys	◆		✓	
Enhanced - System Water Loss	◆			✓
Enhanced - Commercial and Large Landscape Non-Functional Turf Incentive	◆			✓

FIGURE 7-1: CONSERVATION PROGRAM ALTERNATIVES¹⁴¹

7.6.2. Program B – Optimized Program

Of the three conservation program alternatives, Program B, or the ‘Optimized’ Program, was selected based on its ability to strategically and cost-effectively increase conservation while positioning the City to meet future regulatory requirements and sustainability goals. Program B includes existing conservation programs as well as new and enhanced measures with favorable benefit-cost-ratios and/or high savings potential. Moreover, it represents a modification of the City’s existing conservation programs to optimize resources while expanding the portfolio’s overall conservation potential.

When funded after Fiscal Year 2028, Program B would result in an expansion of the current water conservation program budget and may result as well in an expansion of the City’s water conservation staff, with one Water Conservation Supervisor and data analyst, bringing on a total of 13 full-time equivalent staff. With the anticipated new regulations (e.g., UWUOs) and the staff needs; Program B and reporting process would benefit from having a dedicated Supervisor below the Water Conservation Coordinator, to manage and streamline the

¹⁴¹ City of Sacramento Department of Utilities, Sacramento’s Water Conservation Program Highlights & Future Vision presentation to Water Forum. May 21, 2025.

program. A hallmark of Program B is its quantifiable doubling of the present value of water savings over the forecast period compared to the *Current Program* and decreases to the cost per unit of water saved, compared to Program C, which quadruples the present value of water savings compared to the current program. However, implementation of Program C will cost the City approximately 47% more than Program B and influenced the WECP's selection of Program B.

Notably, average annual utility costs are estimated to increase by 28% to fully implement Program B compared to the *Current Program*, however, this is tempered by an overall increase in water savings and cost-efficiency improvements from the increased conservation activities.¹⁴² Several takeaways from estimated Program B costs and savings include: 717 MGY in Maximum Water Savings by 2030; Per Capita Demand of 153 GPCD by 2030; and \$24.5 million in water cost savings.

Program B reflects a moderate yet strategic expansion of conservation efforts. It considers future uncertainties related to the Commercial Outdoor Water Use Standard, future water costs, and potential climate impacts, and how to mitigate such factors. The WECP is attached as Appendix C for review.

7.6.3. Program Implementation

The goal of the Optimized Program's Strategy is to maintain or enhance current measures and supplement additional high-savings activities that help the City achieve regulatory compliance. As such, the rollout of the Optimized Program's activities follows these regulatory timelines. Higher priority conservation measures have earlier starting years than lower priority conservation measures.

In addition to the initiation of Program B, the Plan suggested the following recommendations to the City's existing conservation programs:

- Sunset Existing Toilet Rebate Program
- Sunset Existing Clothes Washer Rebates
- Examine the effectiveness of Smart Water Controller Exceptions
- Review and adjust rebate values
- Annual review of water demands and projections

The selected Program emphasizes long-term behavioral change rather than short-term emergency conservation.

¹⁴² City of Sacramento Water Efficiency and Conservation Plan at p. 51.

Water Loss Performance Standard takes effect on January 1, 2028

- The City's Real Water Loss Standard is 41 gallons per connection per day.

7.6.4. WECP Summary

The 2025 WECP was developed to help the City meet near- and long-term regulatory requirements while strengthening its existing conservation program in coordination with the Regional Water Authority. The WECP establishes a cost-effective, data-driven roadmap to comply with new statewide standards enacted under SB 606, AB 1668, and the "Making Water Conservation a California Way of Life" regulation. Building on the City's established conservation framework, the WECP identifies compliance gaps and incorporates flexibility to address future demand uncertainties. Using historical conservation data, demographic and demand projections, staff input, and DSS modeling, the City evaluated 26 conservation measures and developed three program alternatives. Program B was selected as the preferred approach, reflecting a balanced expansion of conservation efforts designed to address regulatory changes, commercial outdoor water use standards, rising water costs, and climate variability. The WECP also emphasizes adaptive management through annual performance tracking and regular model updates to ensure ongoing compliance with evolving UWUO standards.

7.7. Members of California Water Efficiency Partnership

In 2018, the California Water Efficiency Partnership (CalWEP) was formed to consolidate statewide expertise on water issues, challenges, and opportunities to advance water efficiency at both the agency and statewide levels. CalWEP evolved from the California Urban Water Conservation Council (CUWCC), which had administered a collaborative agreement between SWRCB, DWR, water utilities, environmental organizations, and other interested parties to implement best management practices aimed at reducing water use across California. The City participated in CUWCC from 1995 until its transition to CalWEP in 2018 and remains an active CalWEP member. Through CalWEP, members benefit from networking and partnership opportunities that strengthen water efficiency and conservation programs. The organization is structured around two primary committees: the Research and Evaluation Committee, which collaboratively identifies and advances research initiatives to support member agencies, and the Program Committee, which shares program needs, successes, and challenges while developing actionable strategies to enhance water conservation efforts.

Appendix A

City of Sacramento

Water Shortage Contingency Plan

CITY OF SACRAMENTO WATER SHORTAGE CONTINGENCY PLAN

Strategic Planning and Response Procedures for Water Supply Shortages

Background

This describes the City of Sacramento's (City) strategic planning process to prepare for and respond to water shortages. Chapter 6 of the 2025 Urban Water Management Plan (UWMP) summarizes and accompanies this plan. The description includes assessment of water shortage conditions and shortage response actions that will be implemented in the event of a water supply shortage, the City's ordinance prohibiting water waste, and the emergency preparedness and plans for catastrophic events. The City does not have a separate Water Shortage Contingency Plan (WSCP) specific to its wholesale customers. Each of the City's wholesale customers maintain their own WSCPs which will be reported in their respective Urban Water Management Plans (UWMPs). The City's Wholesale agreements address the individual availability of wholesale water to each customer based on restrictions to the City's American River water rights.

Purpose

The WSCP applies to both foreseeable and unforeseeable water supply shortage conditions. It also includes actions to be taken during natural disasters or catastrophic reductions in water supplies as well as conservation measures and actions (prohibitions, restrictions, and penalties). The City's objective of a WSCP is to protect public health, safety, and welfare, and to minimize the impacts of water supply shortages. This is done by rapidly and accurately determining the type, magnitude, and potential duration of the water system emergency, directing staff and users to the appropriate response, and monitoring demand and supply until the supply returns to normal. This WSCP, if implemented, would be enforced within the City of Sacramento's utility service area.

Compliance

The Urban Water Management Planning Act (UWMPA) requires that an UWMP include a WSCP that addresses specified issues. The Act mandates six standard water shortage levels corresponding to progressive ranges of up to 10, 20, 30, 40, and 50 percent shortages and greater than 50 percent shortage. Urban water suppliers shall define these shortage levels based on the suppliers' water supply conditions, including percentage reductions in water supply, changes in groundwater levels, changes in surface elevation or level of subsidence, or other changes in hydrological or other local conditions indicative of the water supply available for use. Shortage levels shall also apply to catastrophic interruption of water supplies, including, but not limited to, a regional power outage, an earthquake, and other potential emergency events. Shortage response actions must align with the defined shortage levels and include locally appropriate supply augmentation actions, demand reduction actions, operational

changes, and additional mandatory prohibitions against specific water use practices. The California Water Code requires that the City develop mandatory provisions and a draft water shortage contingency resolution as part of the UWMP to reduce water use, including prohibitions against specific wasteful practices, such as gutter flooding. The City Council would need to act on this resolution when a water shortage emergency is declared. The City Code (Chapter 13.04) includes language authorizing the City Council to declare the existence of a water shortage by resolution and impose revised and/or additional limitations and time restrictions on outdoor water use while the water shortage remains in effect.

Water Shortage Task Force Teams

In efforts to prepare for and respond to water shortage needs, two separate Water Shortage Task Force Teams were created: A Department of Utilities (DOU) Task Force Team and a Citywide Task Force Team.

The DOU Water Shortage Task Force Team will first meet when a water shortage is pending and then continue to meet every one or two weeks, until the situation has been resolved. The DOU Water Shortage Task Force Team consists of the DOU Sustainability Manager (Task Force Team Leader), Water Conservation Coordinator, DOU Senior Engineer (Long Range Water Resource Planner), DOU Water Division Manager and Water Superintendents, DOU Customer Service Manager, DOU Assistant Director, DOU Media & Communications Specialist, DOU City Attorney, and ad hoc members including DOU Director and Division Managers.

The Citywide Water Shortage Task Force Team will first meet when a water shortage is anticipated to be announced and then continue to meet at least once a month, until the situation has been resolved. The Citywide team includes all DOU Task Force members plus City Manager's Office Representative, 311 Manager, CDD Code Compliance Division Manager, Parks Operations Services Manager, Public Works Maintenance Services Urban Forestry Supervisor, Public Works Administration & Advanced Planning Program Specialist (Streetscapes), and other City Departments/Divisions as needed.

Water Shortage Task Force Roles & Responsibilities

The roles and responsibilities of the members of the task force teams are clearly defined to ensure effective coordination and response.

Task Force Team Leader (DOU Sustainability Manager)

Responsible for leadership, management, coordination, information gathering and dissemination, key support staff assignments, role clarification, and communication with a broad array of interested parties, and schedules the team meetings.

DOU Water Conservation Coordinator

Responsible for supporting the DOU Sustainability Manager with water use reduction measures, management, cost estimates to achieve demand reductions, and liaison with internal large water users (residential and commercial, industrial, etc.).

DOU Senior Engineer (Long Range Water Resource Planner)

Responsible for configuring and analyzing internal and external water usage data to assist the team with configuring the best course of action to take when comparing supply vs demand during the water shortage event, serves as liaison with adjacent Water Purveyors, and is responsible for estimating and managing long-term water supplies.

DOU Water Division Task Force Team Members

Water Division Manager & Water Superintendents are responsible for overall guidance on drinking water quality and operations, issues related to potential alternative supplies, opportunities for use of non-potable water, and overseeing frequency and intensity of leakage management, system water loss audits, and meter accuracy testing.

DOU Customer Service Manager

Responsible for customer contact, current information about the state of the program, and increasing frequency of customer meter reading.

DOU Assistant Director

Responsible for messaging and coordination with Internal City Departments.

DOU Media & Communications Specialist

Responsible for messaging, customer relations, media relations, press releases, and coordination with wholesale customers.

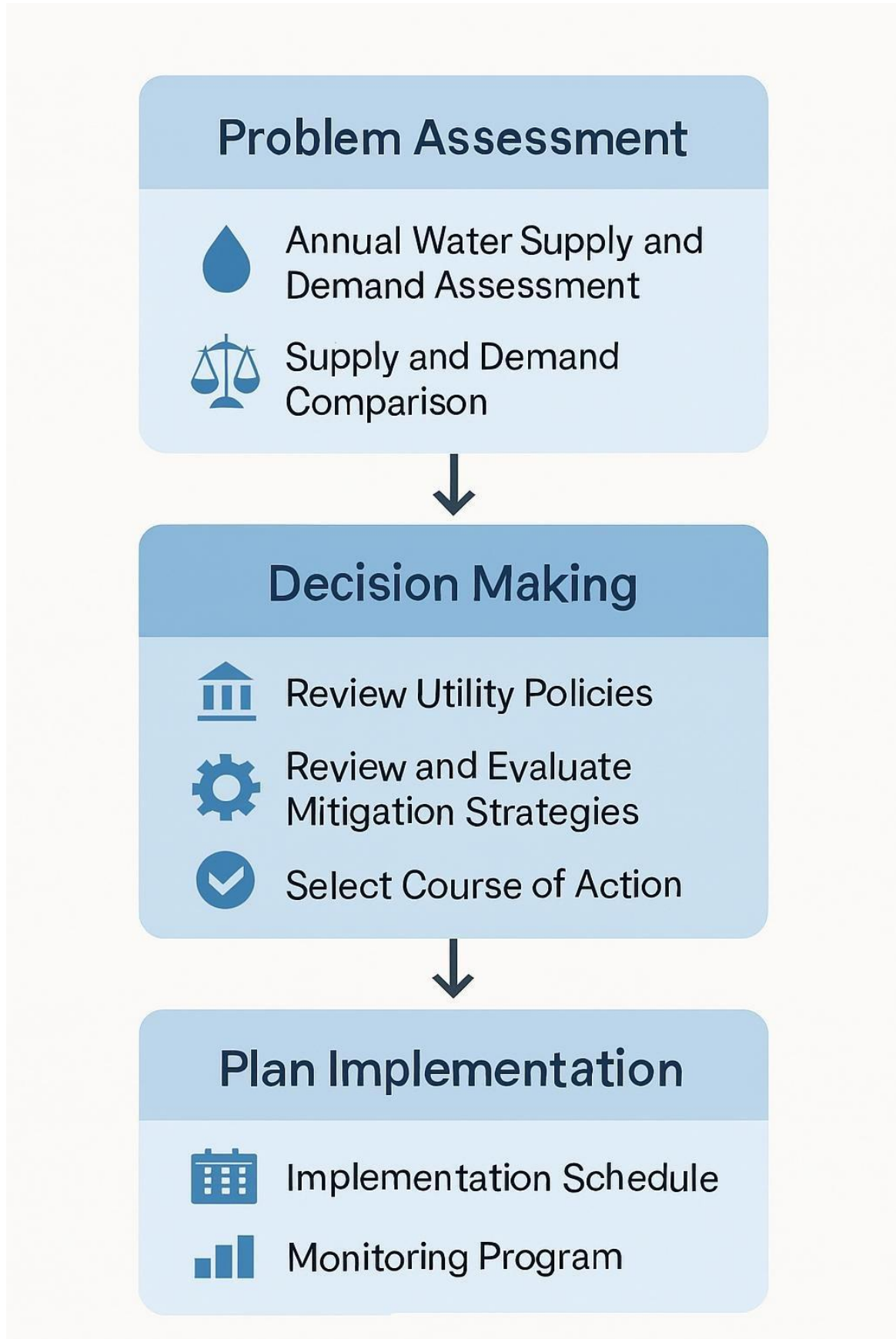
DOU City Attorney

Addresses any legal aspects of meetings and advises on the direction taken by team, reviews legality of program, rate changes, interagency agreements, and contracts.

Other Task Force Team Members

Have ad hoc involvement as it pertains to their Department or Division's capability to help focus in on and improve the situation at hand.

Task Force Team Focus



The Task Force teams should focus on problem assessment, mitigation strategies, and coordinating and communicating with stakeholders as needed. An incident response plan for

City of Sacramento Water Shortage Contingency Plan

any water shortage condition follows a three-step process. Step 1 involves Problem Assessment including the Annual Water Supply and Demand Assessment, with Demand Analysis, Supply Analysis, and Supply and Demand Comparison. Step 2 involves Decision Making, including Review of Utility Policies, Review and Evaluate Mitigation Strategies, and Select Course of Action. Step 3 involves Plan Implementation, including Implementation Schedule and Monitoring Program.

The problem assessment includes the annual water supply and demand assessment described in Section 6. The Task Force teams should consider a wide range of shortage response actions appropriate for the water shortage condition. Shortage response actions may include demand reduction, supply augmentation, and operational modification.

The City may take operational modification actions in response to a water shortage condition. Internal operational actions may include Irrigation Restrictions (ask Parks, Streetscapes, and other City Departments to reduce their irrigation and water use to help meet reduction percentage goals), Preventative Maintenance Restrictions (ask Departments to reduce flushing and street sweeping), and Non-Essential Water Use Reduction (evaluate non-essential activities that use water and ask for reductions of use).

Responses should be appropriate and consistent. Because every situation is different, the teams should adjust their shortage response actions as the situation evolves, conditions change, and new information becomes available. In the event of a water shortage, the City must inform their customers, the general public, and interested parties, and local, regional, and state entities. In either foreseeable or unforeseeable events, timely and effective communication must occur for appropriate response to the event.

Normal City (Day to Day) Water Use Guidelines

The City Code provides the following water use guidelines during normal conditions. The City's water conservation efforts follow these guidelines. Water shall not be wasted due to leaky or faulty water fixtures (§13.04.840). Water shall not be allowed to become water waste runoff and to flow away over the surface of the ground (§13.04.850). No person shall use water for the purpose of washing down sidewalks, driveways, or parking areas except to alleviate immediate fire or sanitation hazards (§13.04.870). Washing vehicle without a shut-off nozzle is prohibited (§13.04.870). Between March 1 and November 1, residential and commercial locations bearing a street address ending in an odd number shall be permitted to irrigate only on Tuesday, and Saturday and locations bearing a street address in an even number shall be permitted to irrigate only on Wednesday, and Sunday. There shall be no water irrigation on Mondays, Thursdays or Fridays (§13.04.860). Watering is limited to just one day per week between November 1 and March 1 on either Saturday or Sunday. No watering within 48 hours of measurable rainfall (1/8") (§13.04.870).

Annual Water Supply and Demand Assessment

Water shortages may occur due to a variety of factors, including climate variability, prolonged drought, regulatory constraints, and unforeseen emergency events. A water shortage condition

exists when available potable water supplies are insufficient to meet normal demands for human consumption, sanitation, fire protection, and other essential uses. While some shortages may be anticipated through planning and monitoring, others may arise suddenly and require immediate response.

The Annual Water Supply and Demand Assessment (AWSDA) is a key planning and compliance tool used by the City to evaluate current and projected water supply reliability relative to anticipated demands. The AWSDA supports proactive drought planning and informs implementation of appropriate response actions under this Water Shortage Contingency Plan.

In accordance with State requirements (Water Code Section 10632.1), the City prepares and submits an Annual Water Shortage Assessment Report to the California Department of Water Resources (DWR) by July 1 of each year. This annual assessment evaluates supply availability for the current and following year, considering hydrologic conditions, operational constraints, and demand projections.

The AWSDA provides the basis for determining whether a water shortage condition exists and, if so, the appropriate shortage level (stage) under the WSCP. The assessment informs decision-making regarding potential declaration of a water shortage emergency, activation of response stages, and implementation of demand reduction and supply management measures.

The AWSDA process also supports coordination among City departments and regional partners to identify potential supply and demand imbalances and to ensure timely and effective response actions. The procedures and timeline for preparation of the AWSDA and Annual Water Shortage Assessment Report are included in Appendix A.

Shortage Stages and Water Use Reduction Plan

For foreseeable events, the AWSDA described above will assist the City in determining its water supply condition for the current year. The preparation of AWSDA helps the City ascertain the need to declare a water shortage emergency and water shortage stage. For unforeseeable events, the City may need to declare a water shortage emergency due to unforeseen water supply interruptions. One of the key elements of the WSCP is a water use reduction plan for each water shortage stage. The City's WSCP includes six standardized water shortage levels (Levels 1 through 6), consistent with State requirements, with each level corresponding to a defined range of supply shortage and target demand reduction.

Each stage's water reduction plan includes specific demand reduction actions and use restrictions. Implementation of these shortage response actions is cumulative; meaning that implementation of a shortage response action at higher stage shall also include implementation of all shortage response actions implemented in previous stages. Shortage conditions associated with each stage are based on the gap between water supply and anticipated water demands. The stages are numbered so that they are consistent with the State's standard water shortage stages. Matching the State's six standard water shortage stages would assure consistent messaging and meet future State reporting requirements.

City of Sacramento Water Shortage Contingency Plan

TABLE 1: SIX WATER SHORTAGE STAGES

Stage	Title	Water Shortage Levels	Required Water Use Reduction
1	Water Watch	Up to 10 percent shortage	5 to 10 percent reduction
2	Water Alert	Up to 20 percent shortage	20 percent reduction
3	Water Warning	Up to 30 percent shortage	30 percent reduction
4	Water Crisis	Up to 40 percent shortage	40 percent reduction
5	Water Emergency	Up to 50 percent shortage	50 percent reduction
6	Water Health & Safety Use Only	>50 percent shortage	>50 percent reduction

Key Elements for Stages of the Water Use Reduction Plan

Table 2 summarizes the key elements for each stage of the Water Use Reduction Plan and the requested actions. The Water Use Reduction Plan and resolution are designed to be flexible so that the City can respond to the specific situation occurring at a particular time. The actions included in each stage are cumulative, meaning that if Stage 1 of the WSCP is declared, all of the shortage response actions in Stage 1 shall be implemented. Likewise, if Stage 2-6 is declared, all of the shortage response actions in stages prior to the declared stage shall be implemented.

Stage 1 occurs when up to a 10 percent gap between supply and demand is anticipated. Under this stage, the City will restrict or cease internal city irrigation and require reduction of each City department's use of water. Stage 2 occurs when up to a 20 percent gap between supply and demand is anticipated. Under this stage, the City will require its customers to reduce water consumption by 10 to 20 percent and will enact specific water use restrictions.

Stage 3 occurs when up to a 30 percent gap between supply and demand is anticipated. Stage 4 occurs when up to a 40 percent gap between supply and demand is anticipated. Stage 5 occurs when up to a 50 percent gap between supply and demand is anticipated. Stage 6 occurs when greater than 50 percent gap between supply and demand is anticipated. The City may declare a water shortage emergency at any shortage level based on determination of the AWSDA, or during a natural disaster or when the health and safety of persons within the City's water service area are jeopardized.

City of Sacramento Water Shortage Contingency Plan

TABLE 2: KEY ELEMENTS OF WATER SHORTAGE STAGES

Stage	Water Conservation Savings Goal	City Actions Required	Internal/External Customer Actions
Stage 1 (Up to 10%)	Up to 10% reduction in water use	• Restrict/cease internal city irrigation • Preventative maintenance restrictions • Cease non-essential water usage	• Reduce departmental water use
Stage 2 (Up to 20%)	10-20% reduction in water use	• Public information campaign • Water waste patrols • Customer watering restrictions	• Reduce consumption by 10-20% • Comply with watering restrictions
Stage 3 (Up to 30%)	Up to 30% reduction in water use	• Intensify public education • Consider drought surcharge • Further limit watering hours	• Further reduce outdoor watering • Adhere to limited watering hours
Stage 4 (Up to 40%)	Up to 40% reduction in water use	• Vigorous public information campaign • Limit outdoor irrigation to 1 day/week	• Manual application only • 1 day per week outdoor watering
Stage 5 (Up to 50%)	Up to 50% reduction in water use	• Eliminate turf watering • Eliminate median strip watering	• No turf or median watering • Significant water use reduction
Stage 6 (>50%)	Greater than 50% reduction in water use	• Restrict water use to health and safety purposes only	• Water use for health/safety only • Maximum conservation measures

Water Shortage Emergency Planning Actions

In addition to responding to drought conditions, the City's WSCP can be used to respond to a range of emergency conditions that may interrupt or degrade water supplies and system operations. Unforeseen interruptions to water supplies may result from events such as water contamination (source, water treatment plant, or system), treatment plant shutdown, major transmission pipeline break, regional power outage, chemical supply shortage, staffing shortages, cybersecurity incidents affecting industrial control systems, or a natural disaster such as an earthquake or flood.

City of Sacramento Water Shortage Contingency Plan

The City is included in Sacramento County's Emergency Operations Plan (EOP), as periodically updated, with a stated purpose to provide the basis for a coordinated response before, during, and after a disaster incident affecting the County of Sacramento. The operational priorities are stated in this order: save lives, protect health and safety, protect property, and preserve the environment. The plan contains sections on Purpose, Scope, Situation and Assumptions; Concept of Operations; Organization and Assignment of Responsibilities; Direction, Control and Coordination; Information Collection and Dissemination; Communications; Administration, Finance and Logistics; and Preparedness, Training and Exercises.

The City's Office of Emergency Services (OES) coordinates the planning, preparedness, communication, response, and recovery during man-made or natural disasters. The City's Emergency Operations Plan, as updated, discusses the effects of many disasters, such as floods, earthquakes, power outages, fires, severe heat, and severe cold on the City's water resources and infrastructure.

The City maintains backup power resources to support continuity of critical operations during emergencies. The document states that the City maintains over 120 generators ranging from 9 kW to 3,250 kW. Portable generators may be deployed at some of the City's water supply facilities in order to maintain a minimum level of water service during the emergency. Both of the City's water treatment plants and all select critical sites of the pump stations have backup generators. While groundwater wells are not permanently equipped with backup power, most active wells are fitted with generator connection capability to allow temporary power supply during outages.

These emergency planning actions support the City's ability to maintain essential water service, protect public health and safety, and implement appropriate response actions in coordination with the WSCP during emergency conditions.

No Water Available from the American River

In the event that the American River supply becomes contaminated (i.e., due to a chemical spill or other environmental incident) or the E.A. Fairbairn Water Treatment Plant (FWTP) is shutdown (i.e., due to a treatment process or mechanical failure), it may be possible that no water would be available from the American River for a period of time. In such a case, the City would need to rely on the Sacramento River supply source (using the Sacramento River Water Treatment Plant (SRWTP)) and the groundwater supply to meet demands. The City also maintains non-firm (i.e., the adjacent agency has no mandatory requirement to perform) mutual aid access to groundwater supplies from adjacent water agencies and could inquire about available capacity. If the Sacramento River supply source (SRWTP), ground water supply, and emergency supply from neighboring agencies were for some reason unable to meet City water supply demands, the City may need to implement one or more stages of the WSCP to notify customers of the need to reduce water until supplies are restored.

No Water Available from the Sacramento River

In the event that the Sacramento River supply becomes contaminated (i.e., due to a chemical spill or other environmental incident) or the SRWTP is shutdown (i.e., due to a treatment process

or mechanical failure), it may be possible that no water would be available from the Sacramento River for a period of time. In such a case, the City would need to rely on the American River supply source (using the FWTP) and the groundwater supply to meet demands. The City also maintains non-firm (i.e., the adjacent agency has no mandatory requirement to perform) mutual aid access to groundwater supplies from adjacent water agencies and could inquire about available capacity. If the American River supply source (FWTP), ground water supply, and emergency supply from neighboring agencies were for some reason unable to meet City water supply demands, the City may need to implement one or more stages of the WSCP to notify customers of the need to reduce water until supplies are restored.

Electrical Power Outage (Localized, Regional, Or Multi-State)

If a localized or regional electrical power outage were to occur, impacting the City's water service area, the City is prepared to meet near-term water demands through the use of diesel generators located at both the Sacramento River and Fairbairn Water Treatment Plants.

Earthquake

Water system infrastructure, including treatment plants, pump stations, storage tanks, and pipelines, can be damaged during a strong earthquake. The City's facilities have been constructed in accordance with the applicable building codes to minimize potential damage during an earthquake. However, some facilities could be damaged as the result of a strong earthquake. The City has planned for this potential outage scenario by constructing system redundancy into its water system. The City has two surface water treatment plants, multiple permitted groundwater wells, multiple storage facilities and looped distribution pipelines, to allow potentially damaged portions of the City's system to be quickly isolated and repaired.

Flood

The City of Sacramento is potentially at risk of flooding as a result of severe storms, large quantities of runoff from the Sierra Nevada, and/or failure of levees which protect the City from major flooding events. The Sacramento Area Flood Control Agency (SAFCA) was created in 1989 to address the Sacramento area's vulnerability to catastrophic flooding. Members of SAFCA include the City of Sacramento, the County of Sacramento, the County of Sutter, the American River Flood Control District and Reclamation District 1000. SAFCA's mission is to provide the Sacramento region with increased flood protection along the American and Sacramento Rivers, with at least a 100-year level of flood protection as quickly as possible, while seeking a 200-year or greater level of protection also as soon as possible. A number of flood protection projects have already been completed, including construction of new levees, repairs to existing levees, and bank protection and stabilization. Even though the City's water system is vulnerable to the risk of flooding, the redundancy it has with two separate water treatment plants diverting water from two different water supply sources (the Sacramento and American Rivers), plus access to groundwater resources, helps alleviate some of this risk. Currently, if the SRWTP is out of service due to flooding, the FWTP may be available to meet City demands, and vice versa. It is possible that a single flooding event could impact both of the City's water treatment plants and other water system facilities; however, in such an instance, the City will respond as quickly as possible to restore water service for the City's residents.

Mandatory Prohibitions and Restrictions

The Sacramento City Code contains a section on water conservation (Title 13 Public Services, Chapter 13.04 Water Service System, Article XI Water Conservation), which outlines the mandatory prohibitions and restrictions that are in place under normal water supply conditions in the City. These measures include the following:

- Water shall not be wasted due to leaky or faulty water fixtures (§13.04.840).
- Water shall not be allowed to become water waste runoff and to flow away over the surface of the ground (§13.04.850).
- No person shall use water for the purpose of washing down sidewalks, driveways, or parking areas except to alleviate immediate fire or sanitation hazards (§13.04.860).
- Landscape irrigation shall be prohibited between the hours of 10:00 a.m. and 7:00 pm between March 1 to the October 31 (§13.04.860).
- Between March 1 and October 31, residential and commercial locations bearing a street address ending in an odd number shall be permitted to irrigate only on Tuesdays, and Saturdays and locations bearing a street address in an even number shall be permitted to irrigate only on Wednesdays, and Sundays. There shall be no water irrigation on Mondays, Thursdays or Fridays (§13.04.860).
- Between November 1 and February 28/29, watering is limited to just one day per week, either on Saturday or Sunday based on street address numbers (odd or even).

As discussed above, the Key Elements Table lists the additional conservation measures associated with each conservation stage, which would further restrict the allowable water uses and landscape irrigation practices.

Water Rates and Penalties for Excessive Use

Most of the City's residential and non-residential customers are currently metered and billed for their water use; all customer connections are now metered as a result of the City's completed meter retrofit program. Metered billing allows the City to track water use across all customer classes and identify excessive or inefficient water use.

SCC §13.04.890 supports the compliance and enforcement of the City's water shortage actions. In addition, pursuant to California law, including Senate Bill 394, the City has authority to enforce penalties for unauthorized use of water from the municipal system, including illegal diversion from fire hydrants. These enforcement provisions complement the City's water shortage response actions by addressing water theft and protecting limited supplies during shortage conditions. The City may impose the following penalties for customers violating water waste probation in SCC Chapter 13.04, Article XI, or City Council approved water use restrictions in response to a declared water shortage condition.

For the first violation within a rolling twelve-month period, the person who committed the violation shall be issued a written notice stating the type of violation. Per City Code, no financial penalty is issued for a first violation even during a declared water shortage.

City of Sacramento Water Shortage Contingency Plan

For the second violation within a rolling twelve-month period, the person who committed the violation shall be issued another written notice stating the type of violation, and the property owner, if different than the person who committed the violation, shall be issued a written notice and fined \$50. Customers can attend a class or participate in either a turf conversion rebate, an irrigation upgrade rebate or have a water wise house call conducted in order to waive the second violation.

For the third violation within a rolling twelve-month period, the fine shall be \$200 and the person who committed the violation and the property owner, if different than the person who committed the violation, shall be issued a written notice.

For the fourth and subsequent violations within a rolling twelve-month period, the fine shall be \$1000 and the person who committed the violation and the property owner, if different than the person who committed the violation, shall be issued a written notice.

The aforementioned penalties, per City Code, represent double the normal amount that would otherwise be levied absent a declared Water Shortage Emergency.

The Director of the City's Department of Utilities (Director) may waive penalties if the owner of the premises participates in one or more of the City's water conservation programs to remove turf grass, upgrade irrigation systems, or install smart irrigation controllers within 120 days after the date of the penalty notice.

In accordance with SCC §13.04.900, the customer may appeal a notice of violation by filing a written notice to the Director within thirty days and specify the grounds for the appeal. Upon review, the City may dismiss the violation, or find sufficient basis for the notice of violation. The customer may request an informal hearing with the Director. The Director may uphold, modify, or rescind the notice of violation, including the penalty imposed by the notice of violation, after hearing relevant evidence.

The City's metering, billing, and enforcement framework supports effective implementation of the WSCP by enabling consistent monitoring of water use, identification of violations, and equitable enforcement of water use restrictions during all shortage levels.

Revenue and Expenditure Analysis

The City's water revenue may be reduced during a shortage condition, as customers are required to utilize less water. In this case, the City would need to reprioritize spending priorities, consider reserves to compensate for decreased revenue, and consider rate increases or a drought surcharge during the water shortage. The City may, in the future, consider merits of conducting a drought surcharge study to evaluate impacts of revenue and costs associated with compliance actions.

Monitoring Actual Water Use Compliance and Reductions

The City's aggregate water supply and system demands are accurately monitored and tracked at the City's two surface water treatment plants and its groundwater facilities. This systemwide

metering provides an overview of water supply and demands, allowing the City to continuously assess system performance and progress toward water shortage response objectives. All customers are now metered and billed based on actual water use, and detailed records are available for individual customer use.

The City incorporated advanced metering infrastructure (AMI) in its meter installation program. AMI provides real-time water use information to both the City and customers. These meters may be used as monitoring tools for compliance and reporting purposes. The City regularly records its water meter readings, along with enforcement actions.

During a water shortage stage, monthly actual water demands may be compared to average year water demands for that same period to determine if the City is achieving its water use reduction goals. The City may adjust its water shortage stage accordingly to meet its water use objectives. At the time of preparation of this WSCP, the State Water Board is preparing regulation for monthly reporting of water production and water uses, along with associated enforcement metrics. The City will evaluate its monitoring processes and assess conformance to the State's monitoring and reporting requirements.

The WSCP is intended to be a dynamic tool to assure that shortage response actions are effective and produce the desired results. This WSCP has been prepared and implemented as an adaptive management plan. The City will use the results of its monitoring and reporting to evaluate the need for, and if needed, revise its WSCP.

Draft Water Shortage Emergency Resolution

A copy of a draft water shortage contingency resolution is provided in Appendix B. The draft resolution provides model language for enacting one or more stages of the City's WSCP. Implementation of the resolution also may require amendments to the Sacramento City Code. When a water shortage emergency condition exists, the City shall declare a water shortage emergency in accordance with California Water Code Chapter 3 Division 1. Water Code Section Division 1, Section 350 states that the governing body of a distributor of a public water supply shall declare a water shortage emergency condition to prevail within the area served by such distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

Appendix A: Annual Water Supply and Demand Assessment Procedure

This Appendix addresses the requirement of California Water Code Section 10632. Since July 1, 2022, urban water suppliers have been required under California Water Code (CWC) §10632.1 to annually prepare and submit an Annual Water Supply and Demand Assessment (AWSDA). Water suppliers are also required to submit an Annual Water Shortage Assessment Report to the DWR by July 1 of each year. This WSCP provides the procedures for the City to conduct its Annual Water Supply and Demand Assessment. The findings from that assessment for the basis of the City's Annual Water Shortage Assessment Report.

The procedures provided in this section are intended to assist the City in planning for potential, foreseeable shortage in water supplies. These procedures provide the steps the City needs to take that may lead to declaring a water shortage emergency and associated stage and implementation of water shortage response actions.

The City DOU Senior Engineer (Long Range Water Resource Planner) is primarily responsible for the preparation of the City's AWSDA and Annual Water Shortage Assessment Report, and submittal of the reports to DWR by July 1 of each year. Key Data Inputs are tracked on a continuous basis and will be considered in conducting the assessment. These inputs may include, but are not limited to, hydrologic conditions, reservoir storage, groundwater availability, regulatory constraints, water quality considerations, and projected customer demands. Coordination with other DOU Task Force members is expected. Under typical conditions, DOU will finalize the assessment in June and submit the report to DWR.

At any time that Key Inputs suggest a shortfall which could require enactment of the WSCP, the assessment will be performed. The City Council is responsible for receiving the AWSDA and adopting the findings of the assessment if it is necessary to enact the WSCP. Based on the findings of the assessment, the City Council is responsible for conducting a duly noticed Council meeting, determining if a water shortage condition exists and, if needed, declaring a water shortage emergency and water shortage stage and authorizing water shortage actions.

Sequence of Assessment and Decision-Making Activities

The City will follow a structured sequence of activities for conducting the assessment and decision-making process. Table 1 shows the Sequence of Assessment Activities and Table 2 shows the Sequence of Decision-Making Activities. Due to variations in climate and hydrologic conditions, the schedule for the finalization of the AWSDA and Annual Water Shortage Assessment Report may vary. The intent of the schedule is to allow shortage response actions to effectively address anticipated water shortage conditions in a timely manner, and to comply with the State's reporting requirements.

Table 1: Sequence of Assessment Activities

City of Sacramento Water Shortage Contingency Plan

Step	Activities	Responsible Party
1	Convene Team	DOU Task Force Team Leader
2	Gather and Review Data	DOU Task Force Members
3	Conduct Analysis	DOU Task Force Senior Engineer
4	Prepare Preliminary AWSDA	DOU Task Force Senior Engineer
5	Review Preliminary AWSDA	DOU Task Force Members
6	Finalize AWSDA	DOU Task Force Senior Engineer
7	Prepare Annual Water Shortage Assessment Report	DOU Task Force Senior Engineer
8	Draft Annual Water Shortage Assessment Report for DWR submittal July 1st	DOU Task Force Senior Engineer

Table 2: Sequence of Decision-Making Activities

Step	Activities	Responsible Party
1	Receive preliminary AWSDA results	DOU Task Force
2	Review preliminary AWSDA findings	DOU Task Force Members
3	Conduct internal review and discussion	DOU Task Force Team Leader
4	Make recommendations for shortage level	DOU Task Force Senior Engineer
5	Present findings to Department Director	DOU Task Force Team Leader
6	Department Director review and approval	Department of Utilities Director
7	Present recommendations to City Manager	Department of Utilities Director
8	City Manager review and decision	City Manager

City of Sacramento Water Shortage Contingency Plan

Step	Activities	Responsible Party
9	Implement approved shortage response actions	DOU Task Force
10	Submit AWSDA assessment and Annual Water Shortage Assessment Report to DWR	DOU Task Force Senior Engineer

Key Data Inputs and Assessment Methodology

The AWSDA requires the evaluation of supply and demands for the current year and one dry year that is assumed to follow the current year. Planned water supplies will be used as input to the AWSDA for the current year and the following one dry year. In planning for water supplies, the following factors are considered: Hydrological conditions, Reservoir Storage Conditions, Regulatory conditions, Entitlement/Contractual constraints, Surface water and groundwater quality conditions, Groundwater well production limitations, Infrastructure capacity constraints or changes, and Capital improvement project implementation.

Planned water supply sources and quantities will be described and be reasonably consistent with the supply projections in the City's last updated UWMP Chapter 6 (Water Supply Characterization). Should the supply sources and projections deviate significantly from projections, an explanation for the difference will be provided.

Planned unconstrained water demands will be used as input to the AWSDA for the current year and the following one dry year. Unconstrained water demands are customer demands where no water conservation measures are in effect beyond normal policy as described in City Code Title 13. In planning for water demands, the following factors are considered: Weather conditions, Water year type, Population changes (for example, due to development projects), Anticipated new demands (for example, changes to land use), Pending policy changes that may impact demands, and Infrastructure operations.

In preparing the AWSDA, the City uses a spreadsheet to plan for current year and future year demands. Planned supply and demand inputs will be entered in the spreadsheet in annual increments. Supply and demand will be compared to determine the reliability of the City's water supply in the current year and the following one dry year.

The City's water supply for the current year and the following dry year will be determined as reliable if water supply is sufficient to meet the planned water demands. If water supply is insufficient to meet planned water demands in the current year and/or the following dry year, the extent of the water shortage condition will be determined, and the City will prepare response actions in accordance with this WSCP.

Appendix B: Sample Resolution

Resolution No. 20XX-XXX

Adopted by the Sacramento City Council [Date]

DECLARING WATER SHORTAGE EMERGENCY AND IMPLEMENTING STAGE [X] OF THE CITY OF SACRAMENTO WATER SHORTAGE CONTINGENCY PLAN.

BACKGROUND: The City of Sacramento has three water supply sources: American River water, Sacramento River water, and groundwater. Normally, the City's water supplies are adequate to meet the City's retail and wholesale water demands. [DESCRIBE CONDITION(S) TRIGGERING A WATER SHORTAGE]. Because of these on-going conditions the Sacramento City Council has determined that it is necessary to enact water conservation measures and water use restrictions, in addition to those already included in the City Code (Chapter 13.04 Water Service System, Article XI Water Conservation), to reduce water use within the City's water service area.

City Code section 13.04.910 authorizes the City Council, by Resolution, to declare the existence of a water shortage emergency and impose revised or additional limitations and restrictions on outdoor water use while the water shortage remains in effect. The City's 2020 Urban Water Management Plan, adopted by the City Council in June 2021, includes a Water Shortage Contingency Plan that sets forth six water conservation stages designed to reduce overall water usage. Each water conservation stage includes specific water conservation measures and water use restrictions designed to conserve water. Implementation of the water conservation stages is cumulative, meaning that implementation of a higher stage also includes implementation of all lower stages.

Water Code Section Division 1, Section 350 requires the governing body of a distributor of a public water supply to declare a water shortage emergency condition to prevail within the area served by such distributor whenever it finds and determines that the ordinary demands and requirements of water consumers cannot be satisfied without depleting the water supply of the distributor to the extent that there would be insufficient water for human consumption, sanitation, and fire protection.

BASED ON THE FACTS SET FORTH IN THE BACKGROUND, THE CITY COUNCIL RESOLVES AS FOLLOWS:

Section 1. Based on the on-going water supply conditions, the Sacramento City Council hereby declares that a water shortage emergency exists and that water use within the City should be reduced by at least [X] percent.

Section 2. The water use reduction described in Section 1 necessitates implementation of Stage [X] of the City's Water Shortage Contingency Plan. The water conservation measures, and water use restrictions for Stage [X], described below, are adopted. These are in addition to the existing provisions of Article XI of Chapter 13.04 of the City Code (Outdoor Water Conservation), and in the event of any conflict between any provision of Article XI and this Resolution, the provisions of this Resolution shall govern while this Resolution remains in effect.

City of Sacramento Water Shortage Contingency Plan

Section 3. The City Manager is authorized and empowered to delegate his authority hereunder to such assistants, deputies, officers, employees, or agents of the City as he shall designate.

Section 4. No person shall use, or cause to be used, City water in violation of any of the provisions of this Resolution while the water shortage remains in effect.

Section 5. The penalties for violations specified in City Code § 13.04.890 shall be doubled while the water shortage remains in effect.

Section 6. This Resolution shall be effective upon its adoption and shall remain in effect until rescinded or otherwise modified by subsequent resolution of the City Council.

Section 7. This Resolution shall be published within ten days after its adoption, pursuant to California Water Code § 376(a).

Appendix C: Regional Water Authority Template

A list of contemplated actions by various regional water purveyors and the Regional Water Authority is included as Appendix C. The City may implement actions in the list as necessary to close the gap between supplies and demand during any water shortage conditions. The Regional Water Authority Template of Suggested Actions and Potential Water Savings provides detailed recommendations for each stage of water conservation, from Stage 1 (Up to 10% reduction) through Stage 6 (Greater than 50% reduction).

The template includes suggested actions, water savings estimate ranges, estimated savings sources, and DWR Demand Reduction Measures that match the required reporting table. Actions include fixing leaks promptly, restricting decorative water features, limiting landscape irrigation to specific times and days, prohibiting runoff from landscape irrigation, requiring shutoff nozzles on hoses, prohibiting washing of hard surfaces, maintaining commercial/industrial equipment, encouraging water conservation practices, and implementing drought rates and surcharges.

Additional activities not in the RWA template that may be in local agency plans include commercial kitchen pre-rinse spray valve requirements, decreasing line flushing, water efficiency program implementation, community outreach and messaging, drought rates and surcharges, improved customer billing, AMI customer leak reports with detection and repair assistance, increased water waste patrols, moratorium on new connections, water use surveys, pool and spa covers, expanded rebate programs for landscape irrigation efficiency, turf replacement, plumbing fixtures and devices, and real loss reduction through pressure management and aggressive leak detection and repair.

Regional Water Authority Template of Suggested Actions

Stage	Recommended Conservation	Suggested Actions	Water Savings Range	Estimated Source	DWR Measure
Stage 1	Up to 10%	Fix leaks promptly within regulatory timeframes	0-1%	Total Production	CII Leak Detection/Repair
Stage 1	Up to 10%	Restrict decorative water features to recirculating only	0-1%	Total Production	Other
Stage 1	Up to 10%	Limit landscape irrigation to 3 days per week	0-10%	Total Production	Limit Outdoor Irrigation
Stage 2	Up to 20%	Continue Stage 1 actions plus prohibit runoff from irrigation	0-5%	Total Production	Other

City of Sacramento Water Shortage Contingency Plan

Stage	Recommended Conservation	Suggested Actions	Water Savings Range	Estimated Source	DWR Measure
Stage 2	Up to 20%	Require shutoff nozzles on hoses for all uses	0-1%	Total Production	Other
Stage 2	Up to 20%	Limit landscape irrigation to 2 days per week	0-15%	Total Production	Limit Outdoor Irrigation
Stage 3	Up to 30%	Continue Stage 2 actions plus prohibit washing hard surfaces	0-1%	Total Production	Other
Stage 3	Up to 30%	Maintain commercial/industrial equipment to eliminate leaks	0-5%	Total Production	CII Leak Detection/Repair
Stage 3	Up to 30%	Limit landscape irrigation to 1 day per week	0-20%	Total Production	Limit Outdoor Irrigation
Stage 4	Up to 40%	Continue Stage 3 actions plus implement drought rates	0-10%	Total Production	Other - Pricing
Stage 4	Up to 40%	Increase water conservation outreach and education	0-5%	Total Production	Public Outreach
Stage 4	Up to 40%	Prohibit landscape irrigation except hand watering	0-30%	Total Production	Prohibit Outdoor Irrigation
Stage 5	Up to 50%	Continue Stage 4 actions plus expand rebate programs	0-15%	Total Production	Other - Rebates
Stage 5	Up to 50%	Implement moratorium on new water connections	0-5%	Total Production	Other

City of Sacramento Water Shortage Contingency Plan

Stage	Recommended Conservation	Suggested Actions	Water Savings Range	Estimated Source	DWR Measure
Stage 5	Up to 50%	Restrict all outdoor irrigation with limited exceptions	0-40%	Total Production	Prohibit Outdoor Irrigation
Stage 6	Greater than 50%	Continue Stage 5 actions plus mandatory water use surveys	0-10%	Total Production	Other
Stage 6	Greater than 50%	Implement aggressive leak detection and real loss reduction	0-20%	Total Production	Water Loss Control
Stage 6	Greater than 50%	Prohibit all non-essential outdoor water use	0-70%	Total Production	Prohibit Outdoor Irrigation

Appendix B – Notices

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 3:06 PM
To: Audie Foster
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

9/25/2025

Audie Foster
California American Water Company

Dear Audie Foster,

The City of Sacramento (“City”) is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City’s updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

The UWMP is the City’s long-term planning document for ensuring water supply reliability. It evaluates projected water demands, supply availability, and water conservation measures, and includes the City’s Water Shortage Contingency Plan (WSCP).

In accordance with CWC Section 10620(d)(3), the City is coordinating the preparation of its plan with other appropriate agencies in the area, including water suppliers that share a common source, water management agencies, and relevant public agencies. In addition, CWC Section 10642 encourages the active involvement of diverse social, cultural, and economic elements of the population during preparation of both the UWMP and the WSCP. This letter serves as part of that outreach and coordination effort.

A draft UWMP will be made available for review in advance of the City’s public hearing, anticipated in late May or early June 2026. A formal notification of the hearing will be distributed at least 60 days prior to its date. The hearing will provide an opportunity for:

1. Community input regarding the City’s water supply reliability.
2. Consideration of the economic impacts of complying with CWC statutes governing the UWMP.
3. Discussion of the City’s Water Shortage Contingency Plan (WSCP).

Information, including draft materials, will be posted on the City of Sacramento’s website at <https://www.cityofsacramento.gov/utilities/reports>.

If you have any questions regarding this notification or the City’s 2025 UWMP process, please contact either myself at 916-808-1425 / ksananikone@cityofsacramento.org or Brett Ewart, Supervising Engineer at 916-808-1725 / BEwart@cityofsacramento.org.

Sincerely,

Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 3:27 PM
To: 'Edmond.l@florincountywd.org'
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan 9/25/2025

9/25/2025
Edmond Leggette
Florin County Water District

Dear Edmond Leggette,

The City of Sacramento ("City") is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City's updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 3:35 PM
To: Paul Schubert
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

9/25/2025
Paul Schubert
Golden State Water Company

Dear Paul Schubert,

The City of Sacramento (“City”) is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City’s updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 3:25 PM
To: staff@natomaswater.com
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

9/25/2025

Brett Gray
Natomas Central Mutual Water Company

Dear Brett Gray,

The City of Sacramento (“City”) is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City’s updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 3:21 PM
To: Tim Shaw
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

9/25/2025

Tim Shaw

Rio Linda/Elverta Community Water District

Dear Tim Shaw,

The City of Sacramento (“City”) is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City’s updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 2:59 PM
To: 'aflores@rwah2o.org'
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

9/25/2025

Ashley Flores, CMC
Regional Water Authority
Sacramento Groundwater Authority

Dear Ashley Flores,

The City of Sacramento (“City”) is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City’s updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 2:53 PM
To: 'GrinsteadM@saccounty.gov'
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

Dear Mike Grinstead,

The City of Sacramento (“City”) is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City’s updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 2:57 PM
To: 'smithtodd@sacounty.gov'
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

9/25/2025

Todd Smith, Director

Sacramento County Sacramento County – Planning & Environmental Review

Dear Director Todd Smith,

The City of Sacramento (“City”) is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City’s updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 3:38 PM
To: 'commissionclerk@saclafco.org'
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

9/25/2025
Sacramento County LAFCo

Dear Sacramento County LAFCo,

The City of Sacramento ("City") is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City's updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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If you have any questions regarding this notification or the City's 2025 UWMP process, please contact either myself at 916-808-1425 / ksananikone@cityofsacramento.org or Brett Ewart, Supervising Engineer at 916-808-1725 / BEwart@cityofsacramento.org.

Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 2:53 PM
To: 'GrinsteadM@saccounty.gov'
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

Dear Mike Grinstead,

The City of Sacramento (“City”) is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City’s updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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In accordance with CWC Section 10620(d)(3), the City is coordinating the preparation of its plan with other appropriate agencies in the area, including water suppliers that share a common source, water management agencies, and relevant public agencies. In addition, CWC Section 10642 encourages the active involvement of diverse social, cultural, and economic elements of the population during preparation of both the UWMP and the WSCP. This letter serves as part of that outreach and coordination effort.

A draft UWMP will be made available for review in advance of the City’s public hearing, anticipated in late May or early June 2026. A formal notification of the hearing will be distributed at least 60 days prior to its date. The hearing will provide an opportunity for:

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 3:10 PM
To: utilities@saccounty.net; plancheck@sacsewer.com
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

9/25/2025

Sacramento Regional County Sanitation District

Dear Sacramento Regional County Sanitation District,

The City of Sacramento (“City”) is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City’s updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 3:18 PM
To: 'bedegrewp@sacsewer.com'
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

9/25/2025

Paige Bedegrew
Sacramento Area Sewer District

Dear Paige Bedegrew,

The City of Sacramento (“City”) is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City’s updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 3:03 PM
To: 'admin@scgah2o.com'
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

9/25/2025

Piret Harmon
Sacramento Central Groundwater Authority

Dear Piret Harmon,

The City of Sacramento (“City”) is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City’s updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 3:08 PM
To: 'feedback@sswd.org'
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

9/25/2025

Dana Dean, P.E.
Sacramento Suburban Water District

Dear Dana Dean,

The City of Sacramento ("City") is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City's updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 3:33 PM
To: 'tokaywater1@att.net'
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

9/25/2025
Curtis Kirby
Tokay Park Water District

Dear Curtis Kirby,

The City of Sacramento (“City”) is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City’s updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 3:40 PM
To: Ashlee Casey
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

9/25/2025

Ashlee Casey, Executive Director
Water Forum

Dear Executive Director Ashlee Casey,

The City of Sacramento (“City”) is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City’s updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, September 25, 2025 3:37 PM
To: 'pwoffice@cityofwestsacramento.org'
Subject: City of Sacramento – Notice of Intent to Prepare the 2025 Urban Water Management Plan

9/25/2025

Rebecca Scott, Director
City of West Sacramento

Dear Director Rebecca Scott,

The City of Sacramento (“City”) is preparing its 2025 Urban Water Management Plan (UWMP) pursuant to the California Water Code (CWC). All urban water suppliers serving more than 3,000 service connections are required to prepare an UWMP every five years. The City’s updated UWMP must be adopted and submitted to the California Department of Water Resources by July 1, 2026.

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Sincerely,

Kathy Sananikone
Assistant Engineer

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:29 AM
To: Audie Foster
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026
Audie Foster
California American Water Company

Dear Audie Foster,

The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).

This notice is being provided at least 60 days in advance of the public hearing on the UWMP, consistent with the requirements of the Urban Water Management Planning Act and pursuant to California Water Code Section 10621(b). The UWMP evaluates the City's existing and projected water supplies, demands, and water management strategies, and demonstrates water supply reliability under normal, single-dry, and multiple-dry year conditions.

The City anticipates holding a public hearing on the UWMP on or around June 16, 2026. Prior to the hearing, the draft UWMP will be made available for public inspection.

The draft UWMP will be available for review at:

- City of Sacramento Department of Utilities website: <https://www.cityofsacramento.gov/utilities/reports>
- In-person review: 1395 35th Avenue

To provide feedback or request coordination, please don't hesitate to contact me.

Sincerely,

Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:35 AM
To: Edmond.l@florincountywd.org
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026
Edmond Leggette
Florin County Water District

Dear Edmond Leggette,

The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).

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Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:36 AM
To: Paul Schubert
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026
Paul Schubert
Golden State Water Company

Dear Paul Schubert,

The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).

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Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:34 AM
To: staff@natomaswater.com
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026
Brett Gray
Natomas Central Mutual Water Company

Dear Brett Gray,

The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).

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Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:33 AM
To: Tim Shaw
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026

Tim Shaw

Rio Linda/Elverta Community Water District

Dear Tim Shaw,

The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).

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Sincerely,

Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:27 AM
To: 'aflores@rwah2o.org'
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026

Ashley Flores, CMC
Regional Water Authority
Sacramento Groundwater Authority

Dear Ashley Flores,

The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).

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Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:11 AM
To: GrinsteadM@saccounty.gov
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

Dear Mike Grinstead,

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Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:23 AM
To: smithtodd@saccounty.gov
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026

Todd Smith, Director
Sacramento County Sacramento County – Planning & Environmental Review

Dear Director Todd Smith,

The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).

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Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:38 AM
To: commissionclerk@saclafco.org
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026
Sacramento County LAFCo

Dear Sacramento County LAFCo,
The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).
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Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:30 AM
To: 'utilities@sacounty.net'; 'plancheck@sacsewer.com'
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026

Sacramento Regional County Sanitation District

Dear Sacramento Regional County Sanitation District,

The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).

This notice is being provided at least 60 days in advance of the public hearing on the UWMP, consistent with the requirements of the Urban Water Management Planning Act and pursuant to California Water Code Section 10621(b). The UWMP evaluates the City's existing and projected water supplies, demands, and water management strategies, and demonstrates water supply reliability under normal, single-dry, and multiple-dry year conditions.

The City anticipates holding a public hearing on the UWMP on or around June 16, 2026. Prior to the hearing, the draft UWMP will be made available for public inspection.

The draft UWMP will be available for review at:

- City of Sacramento Department of Utilities website: <https://www.cityofsacramento.gov/utilities/reports>
- In-person review: 1395 35th Avenue

To provide feedback or request coordination, please don't hesitate to contact me.

Sincerely,

Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:20 AM
To: 'bedegrewp@sacsewer.com'
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026

Paige Bedegrew
Sacramento Area Sewer District

Dear Paige Bedegrew,

The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).

This notice is being provided at least 60 days in advance of the public hearing on the UWMP, consistent with the requirements of the Urban Water Management Planning Act and pursuant to California Water Code Section 10621(b). The UWMP evaluates the City's existing and projected water supplies, demands, and water management strategies, and demonstrates water supply reliability under normal, single-dry, and multiple-dry year conditions.

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Sincerely,

Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:28 AM
To: admin@scgah2o.com
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026
Piret Harmon
Sacramento Central Groundwater Authority

Dear Piret Harmon,

The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).

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Sincerely,

Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:29 AM
To: 'feedback@sswd.org'
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026

Dana Dean, P.E.
Sacramento Suburban Water District

Dear Dana Dean,

The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).

This notice is being provided at least 60 days in advance of the public hearing on the UWMP, consistent with the requirements of the Urban Water Management Planning Act and pursuant to California Water Code Section 10621(b). The UWMP evaluates the City's existing and projected water supplies, demands, and water management strategies, and demonstrates water supply reliability under normal, single-dry, and multiple-dry year conditions.

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Sincerely,

Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:35 AM
To: 'tokaywater1@att.net'
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026
9/25/2025
Curtis Kirby
Tokay Park Water District

Dear Curtis Kirby,
The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).
This notice is being provided at least 60 days in advance of the public hearing on the UWMP, consistent with the requirements of the Urban Water Management Planning Act and pursuant to California Water Code Section 10621(b). The UWMP evaluates the City's existing and projected water supplies, demands, and water management strategies, and demonstrates water supply reliability under normal, single-dry, and multiple-dry year conditions.

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To provide feedback or request coordination, please don't hesitate to contact me.

Sincerely,

Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:39 AM
To: Ashlee Casey
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026

Ashlee Casey, Executive Director
Water Forum

Dear Executive Director Ashlee Casey,

The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).

This notice is being provided at least 60 days in advance of the public hearing on the UWMP, consistent with the requirements of the Urban Water Management Planning Act and pursuant to California Water Code Section 10621(b). The UWMP evaluates the City's existing and projected water supplies, demands, and water management strategies, and demonstrates water supply reliability under normal, single-dry, and multiple-dry year conditions.

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To provide feedback or request coordination, please don't hesitate to contact me.

Sincerely,

Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

Kathy Sananikone

From: Kathy Sananikone
Sent: Thursday, April 16, 2026 7:37 AM
To: pwoffice@cityofwestsacramento.org
Subject: 60 Day Notice of Urban Water Management Plan Preparation and Review

4/16/2026

Rebecca Scott, Director
City of West Sacramento

Dear Director Rebecca Scott,

The City of Sacramento is providing this notice as a follow up to our September 25, 2025 letter regarding the review and preparation of its Urban Water Management Plan (UWMP).

This notice is being provided at least 60 days in advance of the public hearing on the UWMP, consistent with the requirements of the Urban Water Management Planning Act and pursuant to California Water Code Section 10621(b). The UWMP evaluates the City's existing and projected water supplies, demands, and water management strategies, and demonstrates water supply reliability under normal, single-dry, and multiple-dry year conditions.

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- In-person review: 1395 35th Avenue

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Sincerely,

Kathy Sananikone
Assistant Engineer



1395 35th Ave
Sacramento, CA 95822-2911
916-808-1425

PROOF OF PUBLICATION

STATE OF CALIFORNIA

COUNTY OF SACRAMENTO

HEATHER BRANTLEY

CITY OF SACRAMENTO
CITY CLERK
915 I ST HCH 5TH FLR
SACRAMENTO CA 95814

NOTICE OF PUBLIC HEARING
NPH 20206-00939 2025 URBAN WATER PLAN UP-
DATE (1ST)
01765
HEARING/CLOSE/SALE DATE: 06/16/26

The undersigned says:

I am over the age of 18 years and a citizen of the United States. I am not a party to and have no interest in this matter. I am a principal clerk of the SACRAMENTO BULLETIN*, a newspaper of general circulation in the City of Sacramento, Sacramento Public Notice District, the County of Sacramento, and the State of California, as adjudicated in Sacramento Superior Court Case No. 00SC01155. The notice, a printed copy of which appears hereon, was published on the following date(s): Jun 1, 2026

I declare under penalty of perjury that the foregoing is true and correct. Executed at Los Angeles, California on 06/01/26.


signature

Sacramento Bulletin
530 Bercut Dr
Ste H
Sacramento Ca 95811
Phone: 916-445-6825
Fax: 916-443-5871

Cust. Num.: 015572

Control Num.: 127879

Cust. Ref. Num.: PO82414



NOTICE OF PUBLIC HEARING
Sacramento City Council
City Hall Council Chamber
915 "I" Street, 1st Floor, Sacramento,
CA 95814
www.cityofsacramento.gov/

Instructions for accessing and participating in the meeting will be posted along with the meeting agenda by close of business **Thursday, June 11, 2026**. To access this information, please visit <https://meetings.cityofsacramento.org> and choose "Upcoming Meetings" and then select the appropriate meeting to access the agenda material. The City also posts meeting agendas at City Hall. Members of the public are encouraged to submit public comments electronically via eComment through the City's Upcoming Meetings website.

Tuesday, June 16, 2026, at 2:00 p.m.

Notice Title: Review of Draft City of Sacramento 2025 Urban Water Management Plan Update

Location (of project): Citywide

Project Description: In accordance with the Urban Water Management Planning Act (California Water Code Section 10610 et seq.), the City of Sacramento is required to update its Urban Water Management Plan (UWMP) to meet the California Water Code requirements and Department of Water Resources (DWR) guidelines for a 2025 UWMP.

The City has also updated its Water Supply Shortage Contingency Plan in accordance with Senate Bill 606 and Assembly Bill 1668 which set new requirements for water shortage contingency planning (WSCP). The City has completed its draft 2025 UWMP and WSCP update and has scheduled a public hearing for the review of the updated planning documents and the City's status for meeting its urban water use target on Tuesday, June 16, 2026 at 5:00 pm in the City Hall Council Chamber located at 915 I Street, 1st Floor. A copy of the resolution is on file in the Office of the City Clerk of the City of Sacramento: City Hall, Sacramento, California.

Environmental Determination: [N/A]

Prior Commission/Committee/Director Action: [N/A]

A detailed staff report for this item will be published on the City of Sacramento website by close of business on **Thursday, June 11, 2026**, at the link noted above.

For further information on this matter, please contact: Brett Ewart, Supervising Engineer, Department of Utilities, (916) 808-1725.

This notice is being delivered in the matter required by Water Code Section 10642 and Government Code 6066.

A copy of the 2025 UWMP and WSCP can be viewed by visiting the City's website at <https://www.cityofsacramento.org/Utilities/Reports>.

If you challenge the proposed action in court, you may be limited to raising only those issues you or someone else raised at the Public Hearing described in this notice

or in written correspondence delivered to City Council at or prior to the Public Hearing.

Further information may be obtained from the Office of the City Clerk at (916) 808-7200.

/s/
Mindy Cuppy
City Clerk
CN127879 PO82414 Jun 1, 2026


PROOF OF PUBLICATION

STATE OF CALIFORNIA

COUNTY OF SACRAMENTO

HEATHER BRANTLEY

CITY OF SACRAMENTO
CITY CLERK
915 I ST HCH 5TH FLR
SACRAMENTO CA 95814

NOTICE OF PUBLIC HEARING
NPH 2026-00939 2025 URBAN WATER PLAN UP-
DATE (2ND)
01766
HEARING/CLOSE/SALE DATE: 06/16/26

The undersigned says:

I am over the age of 18 years and a citizen of the United States. I am not a party to and have no interest in this matter. I am a principal clerk of the SACRAMENTO BULLETIN*, a newspaper of general circulation in the City of Sacramento, Sacramento Public Notice District, the County of Sacramento, and the State of California, as adjudicated in Sacramento Superior Court Case No. 00SC01155. The notice, a printed copy of which appears hereon, was published on the following date(s): Jun 8, 2026

I declare under penalty of perjury that the foregoing is true and correct. Executed at Los Angeles, California on 06/08/26.


signature

Sacramento Bulletin
530 Bercut Dr
Ste H
Sacramento Ca 95811
Phone: 916-445-6825
Fax: 916-443-5871

Cust. Num.: 015572

Control Num.: 127880

Cust. Ref. Num.: PO82414



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City Hall Council Chamber
915 "I" Street, 1st Floor, Sacramento,
CA 95814
www.cityofsacramento.gov/

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or in written correspondence delivered to City Council at or prior to the Public Hearing.

Further information may be obtained from the Office of the City Clerk at (916) 808-7200.

/s/
Mindy Cuppy
City Clerk
CN127880 PO82414 Jun 8, 2026


Appendix C – Water Efficiency and Conservation Plan

Prepared By:



Maddaus Water Management

City of Sacramento

Water Efficiency & Conservation Plan

PUBLISHED APRIL 2026



MADDAUS WATER MANAGEMENT
Making a Difference in the World of Water™

2026

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Abbreviations and Acronyms

AB	Assembly Bill
AF	acre-feet
AFY	acre-feet per year
AMI	Advanced Metering Infrastructure
AWWA	American Water Works Association
BCR	Benefit Cost Ratio
BMP	Best Management Practice
CALGreen	California's Green Building Standards Code
CalWEP	California Water Efficiency Partnership
CCF	centum cubic feet
CEC	California Energy Commission
CI	Commercial/Industrial
CII	commercial, industrial, and institutional
CIMIS	California Irrigation Management Information System
City	City of Sacramento
COVID-19	Coronavirus Disease 2019
DAC	Disadvantaged Community
DEI	Diversity, Equity, and Inclusion
DIM	dedicated irrigation meter
DOU	Sacramento Department of Utilities
DSS Model	Least Cost Planning Decision Support System Model
DWR	California Department of Water Resources
ETo	evapotranspiration
FTE	full-time equivalent
FY	fiscal year (July 1-June 30 for City of Sacramento)
GPCD	gallons per capita per day
gph	gallons per hour
FY	fiscal year (July 1-June 30 for City of Sacramento)
GPCD	gallons per capita per day

gph	gallons per hour
HET	high efficiency toilet
HOA	homeowners association
KBAI	Key Business Activity Indicator
LAM	landscape area measurement
MF	multifamily
MGD	million gallons per day
MGY	million gallons per year
MUM	mixed use meter
MWM	Maddaus Water Management Inc.
NFT	non-functional turf
Plan	2026 Water Efficiency and Conservation Plan
PV	Present Value
Regulation	"Making Water Conservation a California Way of Life" Regulation
RWA	Regional Water Authority
SB	Senate Bill
SB X7-7	Water Conservation Act of 2009
SF	single family
SLA	special landscape area
SMUD	Sacramento Municipal Utility District
SURA	Sacramento Utility Rate Assistance program
SWRCB	State Water Resources Control Board
TDS	total dissolved solids
UWUO	Urban Water Use Objective
UWMP	Urban Water Management Plan
Water Forum	Sacramento Water Forum
WCP	City of Sacramento's 2013 Water Conservation Plan
WSMP	Water Supply Master Plan

Executive Summary

Introduction

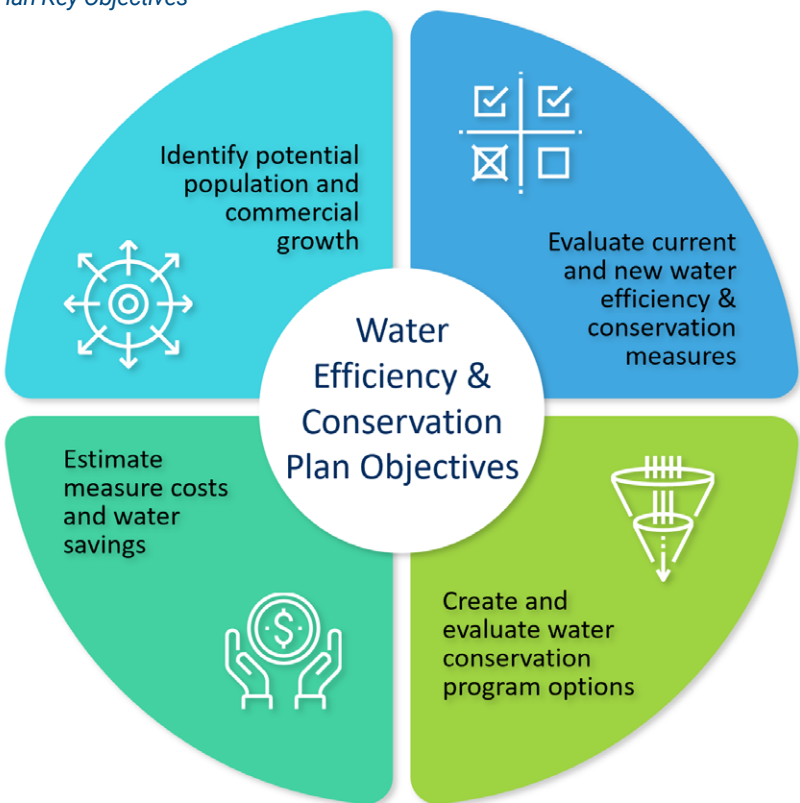
The purpose of this Executive Summary is to provide an overview of the City of Sacramento's (City) 2026 Water Efficiency and Conservation Plan (Plan). The Plan will present the full conservation evaluation process, the assumptions used to conduct the analysis, and the recommended implementation steps.

The City of Sacramento has long been a leader in water conservation, demonstrating a strong commitment to reducing the demand for potable water through its conservation program and work towards maximizing existing water sources to maintain reliability during changing conditions.

Expanding existing efforts as cost effectively as possible will help the City meet future water use objectives and ensure ongoing compliance with the "Making Water Conservation a California Way of Life" Regulation (Regulation) effective as of January 1, 2025. The cost effectiveness of the programs included in the Regulation is further described in Section 4 of this Plan.

To develop this Plan, the City engaged Maddaus Water Management Inc. (MWM) to conduct a thorough technical conservation analysis, focusing on four key objectives.

Figure ES-1. Conservation Plan Key Objectives



Program Overview

Through the identification and prioritization of water efficiency and conservation measures, this Plan enables the City to project long-range water demands, identify attainable conservation goals, develop conservation strategies, raise awareness of water-efficient practices throughout the community, and outline a strategy to comply with the Regulation.

The planning process included analyzing measures and programs using the Least Cost Planning Decision Support System (DSS Model), developed by MWM, and following the methodology presented in the American Water Works Association (AWWA) Manual of Practice, *M52 Water Conservation Programs – A Planning Manual* (AWWA, 2017). Following a thorough process of engagement with City and Regional Water Authority (RWA) staff, 19 measures were selected for evaluation from a pool of over 130 measures. An additional seven “enhanced” measures were later developed for evaluation, representing current measures that the project team anticipated would be good candidates for future enhancement. This suite of 26 measures includes residential, commercial, indoor, and outdoor measures and spans all customer service sectors.

After incorporating feedback from the Sacramento Water Forum, (Water Forum), and insights derived from the project team’s analysis efforts, three conservation program scenarios were developed. The best (“optimized”) conservation program for implementation was selected for its alignment with the City’s conservation goals as well as its compliance with the Regulation. By combining new initiatives with existing programs and plumbing code savings, the City’s optimized program scenario (“Program B”) is expected to save an average of 2.58 million gallons (of water) per day (MGD) through 2055, depending on program participation, funding availability, and implementation schedule. An approximate 28% increase in average annual utility costs is estimated to be needed to implement Program B as compared to the current modeled program. The increase in overall water savings and cost-efficiency improvement for the increased conservation activity in Program B is noteworthy and offers a more proactive response to reducing water demand compared with the current program. All 26 measures evaluated as part of this Plan are listed in Figure ES-2. Descriptions of measures as well as a detailed breakdown of the measure composition of Programs A, B, and C can be found in Chapter 4.

The analysis efforts undertaken to prepare this Plan revealed that activity level has reached saturation for a few of the long-standing programs. As such, the project team identified the following recommended revisions to the City's current conservation program:

1. **Sunset Existing Toilet Rebate Program** – The program started in 2009, and activity has been low for the past two years following the end of the drought in 2022, when rebates were doubled for ultra-High Efficiency Toilets. MWM recommends removing this program and instead implementing the toilet retrofit program in the newly designed Program B to capture the remaining water savings from toilets. The City is aware of potential free ridership for this, which has been included in the savings analysis considerations.
2. **Sunset Existing Clothes Washer Rebate Program** – The program started in 2009, and activity has been low for the past two years following the end of the drought in 2022 when rebates were doubled. The City recognizes that significant free-ridership already exists for this program, and it is expected to increase once the 2028 federal regulations on clothes washers take effect, which will restrict the sale of high-water-use clothes washers nationally. A 25% free-ridership factor was included in the savings analysis considerations for this reason.
3. **Examine Smart Water Controller Exception for Two Day a Week Watering Ordinance** – The original ordinance was modified more than eight years ago to encourage the installation of this newer technology. Now that smart controllers are industry standard and have features including programming in "black out days" or "allowable watering days" to adhere to the original ordinance, this exception might be further analyzed with an adjustment.
4. **Review and Adjust Rebate Values** – Annually review and regularly adjust individual rebate values (as appropriate) to create a flexible program that can adapt to technological changes, variable weather patterns, customer behavior and changes in regulation compliance status. Factors to consider include:
 - Recent program activity.
 - Price of the product (increase or decrease in cost).
 - The stage of market saturation for the product (i.e., whether it is a new or established product).
 - The dollar value needed to motivate customers towards change.
 - Whether water shortage conditions are present and the City needs to increase conservation efforts.

5. **Annually Review Water Demands and Projections** – This Plan was developed using information provided by the City. As service area dynamics shift and new planning efforts are completed, annual water demand should be reviewed to assess projected versus realized demands for the year and how changes can affect future demand and compliance with the new Regulation. Current recommendations for near-term implementation of Program B and future consideration of Program C:

- The City must comply with the new statewide water efficiency Regulation that took effect on January 1, 2024. The new Program B aims to keep the City in compliance with the Urban Water Use Objective (UWUO) based on the available information and the 2024 reporting information shared in Section 6.1 and Appendix A.
- As soon as possible, the City should hire a Water Conservation Supervisor to best track the day-to-day operations of the program but would also strongly benefit by hiring a Data Analyst to handle the increased program needs, support Regulation compliance, analyze data from the new Program B measures, and efficiently analyze the Advanced Metering Infrastructure (AMI) water data similar to Section 5. Tracking water use utilizing AMI data will be significant for identifying participation and effectiveness of the City's conservation programs.
- The new Statewide UWUO Regulation still has many unknowns, including some data that has not yet been released to the City. The Regulation will continue to be defined, and the City will continue to grow and change over the coming years. If the City's water use increases 5-10% in per capita water use, then the City should seek additional staffing and apply resources to implement Program C.
- It is important to recognize that implementing water efficiency and conservation measures will also advance other City goals and initiatives. These measures should be reviewed annually to identify opportunities for alignment and resource sharing. For example, the Climate Action Adaptation Plan includes reduction targets that closely align with the water conservation goals outlined in this Plan.

In addition, to support the transition to the new Regulation, it is envisioned that MWM will help the City in the following ways over the next 12 months:

1. Track the near-term program changes and support the transition of the sunset of clothes washer and toilet incentive measures.
2. Analyze another year of AMI data, and track and review the water use of individual accounts, particularly those participating in the City's conservation program.
3. Support the City in the January 1, 2026, and the January 1, 2027, Urban Water Use Objective reporting requirements.
4. Review the upcoming 2026 Water System Audit Software Workbook and assess if the gallons per connection aligns with Water Loss Performance Standard targets and recent trends.
5. Review the demand forecast from the 2025 Urban Water Management Plan.

It is also recommended that the City continue to team with RWA, Sacramento Municipal Utility District, Sacramento Area Sewer District, and other local partners as appropriate to assist with funding, outreach and implementation of the measures. Grant funding opportunities are typically more successful when implemented on a regional basis.

Figure ES-2. Selected Measures for Evaluation*

Residential

- Residential Leak Repair Assistance Rebate
- Leak Free Sacramento
- Indoor Water Surveys
- Residential Plumber Initiated High Efficiency Toilet Retrofit Program^B
- Residential Clothes Washer Rebate
- Enhanced - Residential Leak Repair Assistance^B
- Enhanced - AMI Targeted Leak Free Sacramento^B
- Enhanced - Residential Water Surveys^B

Commercial

- CII Customized Top Users Incentives
- CII Water Savings Performance Program^B
- CII Rebates to Replace Inefficient Equipment^B
- Install High Efficiency Fixtures in MF & CII Buildings

Landscape & Irrigation

- Single and Multifamily Residential Financial Incentives for Irrigation and Landscape Upgrades
- Landscape Irrigation Restricted to Designated Days and Times^B
- Commercial and Large Landscape Financial Incentives for Irrigation and Landscape Upgrades
- Outdoor Water Use Evaluations
- Large Landscape Water Surveys^B
- Enhanced - Water Budgeting/Monitoring for Dedicated Irrigation Meters^B
- Enhanced - Residential Smart Landscape Rebates^B
- Commercial and Large Landscape Non-Functional Turf Outreach^B
- Enhanced - Commercial and Large Landscape Non-Functional Turf Incentive

Education, Partnership, Other

- Partnership with Energy Utilities – Incentive
- Water Loss Tracking^B
- Public Outreach & Education^B
- Enhanced - Water & Energy Partnership Rebates^B
- Enhanced Water Loss Control Program

**B - Measure is included in the Optimized Program B.*

1. Introduction

The focus of this Plan's analysis is the City of Sacramento's retail service area, a 101 square mile area in the Central Valley of California. The oldest incorporated city in California and the state's capital, the City of Sacramento currently serves a population of approximately 530,000 people. In addition to producing water from its groundwater wells, the City treats surface water diverted from the Sacramento and American Rivers with two water treatment facilities: the Sacramento River Water Treatment Plant and the E.A. Fairbairn Water Treatment Plant. Though not described in detail in this Plan, additional information on the existing supply and distribution system infrastructure, including pipelines, treatment facilities, and other components, is provided in the 2020 Urban Water Management Plan.

As a retailer with approximately 145,000 service connections, the City is required to implement the new framework established under the *"Making Water Conservation a California Way of Life"* Regulation (Regulation) effective January 1, 2025. This recent Regulation requires urban retail water suppliers to meet individualized annual efficiency goals that are established based on the unique characteristics of the supplier's service area, summed up as the Urban Water Use Objective (UWUO). Suppliers can implement various measures to meet their water use objective. In collaboration with City staff, RWA, and the Water Forum, MWM prepared this Plan to help the City outline a strategy to comply with the new Regulation while advancing the water efficiency and conservation initiatives already implemented by the City in its pursuit of sustainable resource management.

1.1 Plan Background

The intention of this Plan is to systematically evaluate and quantify a long-term water efficiency and conservation strategy for the City's service area while also meeting the requirements under the Regulation. In this Plan the terms water efficiency and water conservation are essentially used interchangeably; the City is focused on responsible management of water supplies and implementing the most cost effective of water efficiency and conservation programs. Through the identification and prioritization of water efficiency measures, the Plan enables the City to project long-range demands, identify attainable efficiency goals, develop strategies, and raise awareness. By combining new initiatives with existing programs, this comprehensive strategy and slate of activities will contribute to a more sustainable management of water supplies for the City's community that aligns with new regulatory requirements.

MWM's goal with this effort was to provide the City with an analysis of its current conservation program and recommendations to help achieve its water efficiency goals in the most cost-effective manner possible. This Plan and the DSS Model support the City in maneuvering water efficiency requirements as part of Senate Bill (SB) 606 and Assembly Bill (AB) 1668 *"Making Water Conservation a California Way of Life"* legislation. Additionally, this Plan supports the City in planning a long-term approach to managing water resources sustainably through water conservation. Implementing strategic water-saving measures is becoming increasingly important for strengthening water system resiliency in the face of drought, population growth, and economic pressures.

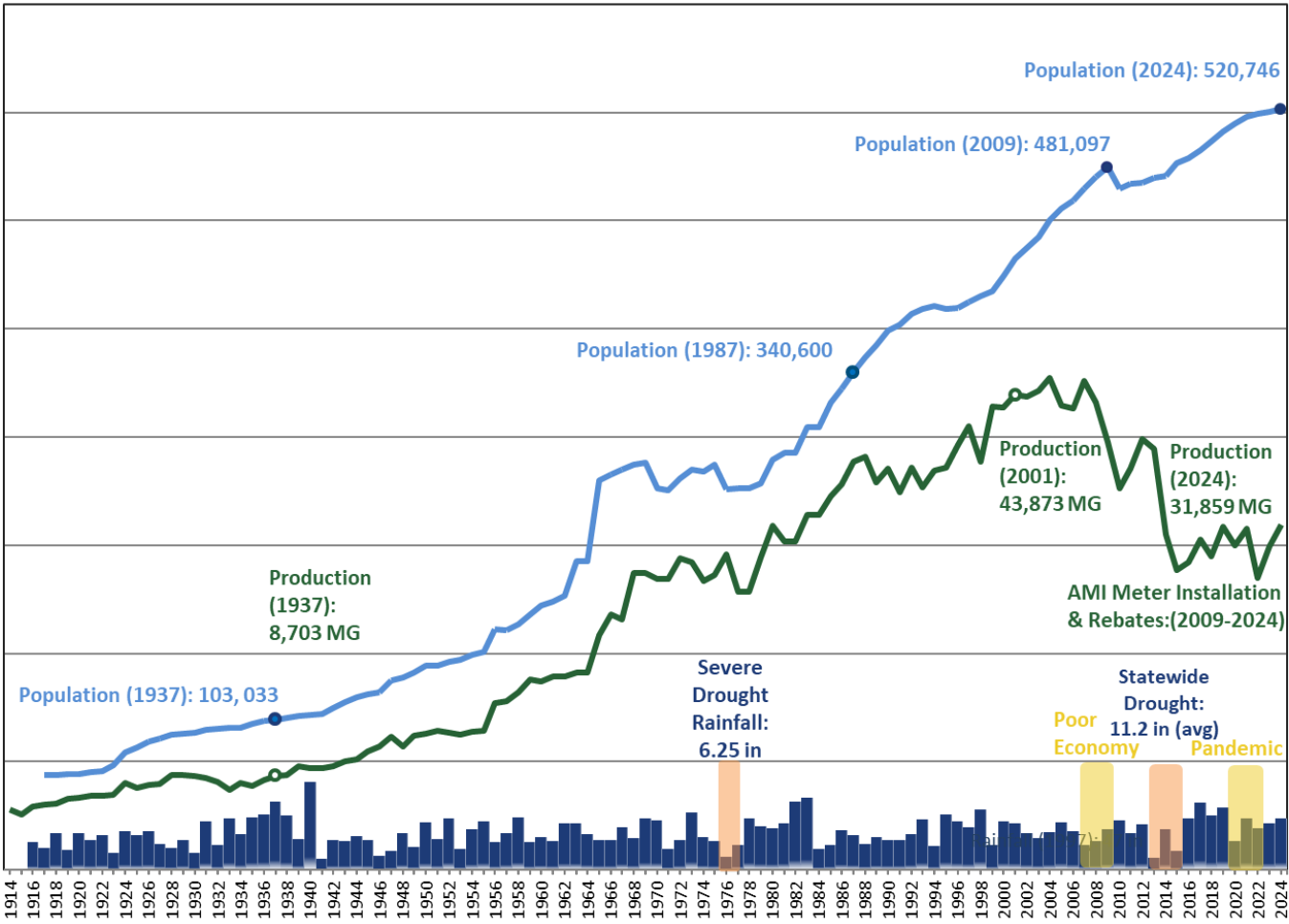
MWM previously worked on the City of Sacramento's 2013 Water Conservation Plan (WCP), the first conservation plan for the City and established a long-term framework for improving water use efficiency. The WCP recommended rebate programs and provided an approach to stay current with the State of California's Green Building Standards Code (CalGREEN) water efficiency plumbing requirements and the Water Conservation Act of 2009's (SB X7-7) gallons per capita per day (GPCD) targets. From 2014-2024 the City's conservation staff worked with regional partners and was successful at implementing the WCP, improving overall water efficiency for the City. Additional details and accomplishments are described in Section 4.

Starting in July 2009, the City worked diligently to install 144,000 meters, completing the Advanced Metering Infrastructure (AMI) installation recommendation from the WCP. This significant accomplishment has allowed the City to implement a wide range of new measures that leverage data analytics and make data-driven conservation investment decisions.

The City has experienced many external events in the past 20 years, including two droughts in 2014-2016 and 2021-2022, a poor economy from 2008-2011, and the global Coronavirus Disease of 2019 (COVID-19) pandemic from 2019-2022, all of which temporarily impacted residential and non-residential water use.

Figure 1-1 demonstrates the City's water use and trends over the last 110 years for population, rainfall, and water production. Although the City's population has increased significantly, overall water production greatly declined 10 years ago then stayed relatively steady amidst the combined factors of active conservation, passive conservation, AMI metering, and external events.

Figure 1-1. History of City Population, Water Production, and Rainfall – 1914-2024



1.2 Plan Purpose

This Plan reflects the City's mission and goals to protect water resources and ensure a reliable, sustainable supply through efficiency and conservation, while also meeting new regulatory requirements. The City will accomplish this by:

- Fostering a strong community water conservation ethic through:
 - Public education and outreach that highlight the value of water, promote conservation practices, and encourage participation in City initiatives.
 - Equitable distribution of resources and incentives across all customer classes.
- Securing adequate water supplies for current and future demands, including drought response and emergency situations by:
 - Applying data-driven decision-making to guide planning and operations.
 - Establishing systems to track current demand patterns, forecast future needs, and evaluate and adapt program elements as necessary to support long-term resiliency.

This Plan will serve as a guide for the City regarding future water use efficiency and conservation investments and activities. It includes a functional implementation plan to establish and administer cost-effective measures. Based on a preliminary analysis of 26 individual measures, three programs (Programs A, B, and C) were designed in collaboration with the City and RWA, then reviewed by members of the Water Forum. Each of the three programs were evaluated to determine the net effect of running multiple measures together over the 30-year period of analysis (2025–2055) and the resulting effects on water demand.

This model estimates water conservation savings through the year 2055. Despite the inevitable uncertainty involved in long-term planning like this, its value lies in the consequential economic, social, and environmental benefits that are more effectively generated with a longer lookout. Ensuring reliable water access across an extended period more reliably reduces operational costs and protects ecosystems. Longer term planning for efficient water use is more effective in helping communities maintain water resilience by extending the life of existing facilities and postponing the need for expensive new infrastructure which typically needs a decade of planning if not more. This timeline is also consistent with California's Urban Water Management Plan (UWMP) projection timeline.

1.3 Plan Objectives

The objectives of this Plan are summarized below and driven by the purpose presented earlier:

- Expand water efficiency efforts through targeted conservation strategies.
- Increase customer awareness and participation in water-saving programs.
- Identify and prioritize cost-effective water efficiency measures.
- Collaborate with local entities such as RWA and the Water Forum.
- Integrate conservation goals into broader water supply and demand planning efforts.
- Monitor and adapt programs based on performance metrics and emerging technologies.
- Provide the City with a roadmap and tool (DSS Model) needed to comply with the state of California's new regulatory requirements, in the short- and long-term.

1.4 California Legislation and the Water Use Objective

The recurring droughts in California, combined with expected increases in stress events for the water supply system due to climatic swings (in conjunction with other economic and demographic factors), have continued to exacerbate the need to implement diverse strategies to increase the resilience of water supplies. In 2024, aligned with the long history of passing legislation to address water supply system concerns and increase resilience, the California State Water Resources Control Board (SWRCB) adopted the *"Making Water Conservation a California Way of Life"* Regulation¹ (Regulation). This new regulation sets a unique Urban Water Use Objective (UWUO), which is essentially a water budget, for each urban retail water supplier, along with performance measures for the Commercial, Industrial, and Institutional (CII) sectors. Agencies, including the City, must begin reporting on the Regulation starting January 1, 2025, and compliance with the UWUOs is required by 2027. Chapter 6 of this Plan outlines MWM's vision for the City's conservation program strategy to achieve compliance with the Regulation through the next few decades, as more stringent water efficiency standards take effect.

¹ Final Regulation text can be found on the SWRCB website: https://www.waterboards.ca.gov/conservation/regs/water_efficiency_legislation.html#reg-docs.

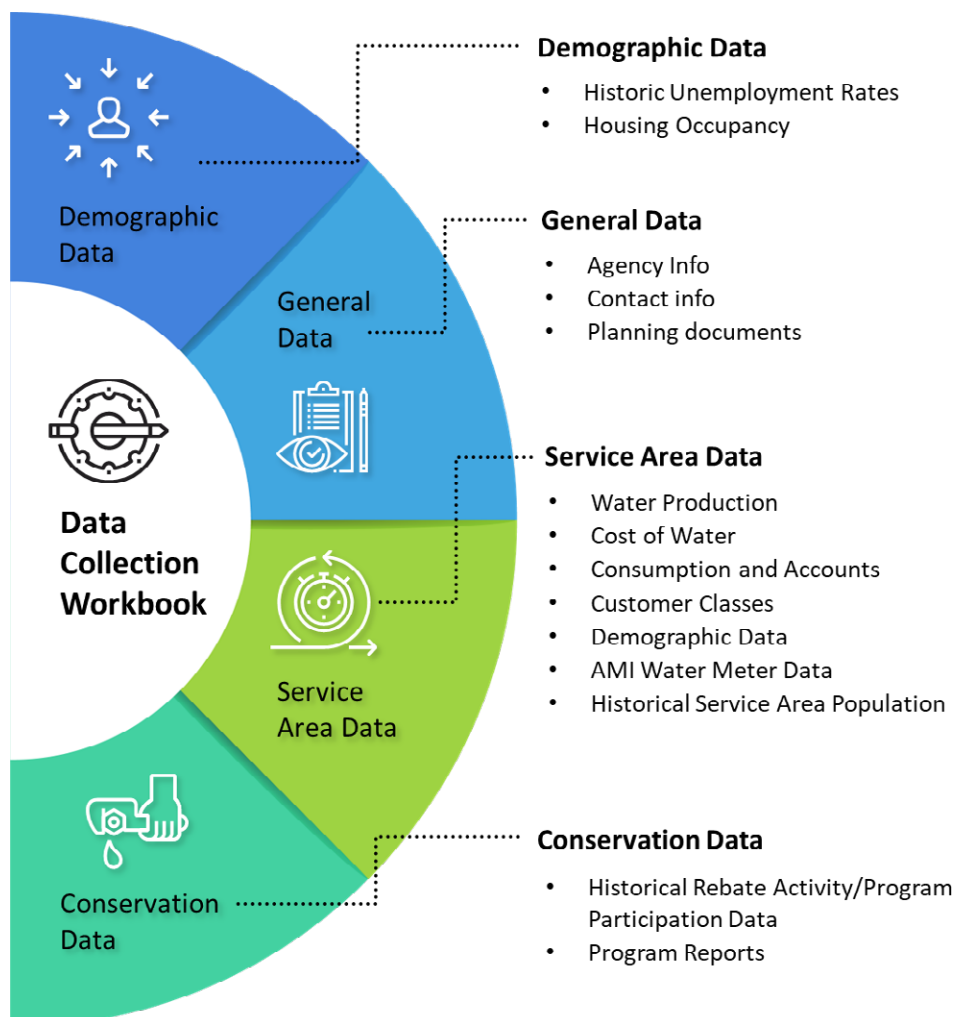
1.5 Plan Development and Data Collection

The development of the Plan included coordination between MWM and the City to manage all aspects of the project and document preparation, including review of past documentation and data analyses. The City provided data in response to a list of specific requirements requested by MWM to support the technical analysis necessary for modeling water demand and the impact of conservation activities. Collection and review of available information relevant to this effort were conducted, entered, and tracked in a robust workbook kept by MWM and the City known as the Data Collection Workbook. The information requested and received is presented in Figure 1-2.

A brief overview of the few of the items requested is provided below:

- **Demographic Data:** Historical and projected water system service area population, housing development projections through 2055, along with maps of the water system and political jurisdiction boundaries.
- **Service Area Data:** Customer characteristics and data needed to characterize water efficiency measures, such as the number of facilities or businesses of a particular type. Consumption and accounts: Prior year(s) monthly water use data for the different classes of water users.
- **Conservation Data:** Complete descriptions of past, present, and proposed future conservation programs, including historical annual participation (for programs where data was available).

Figure 1-2. Data Collection Workbook Topics and Requested Items



1.5.1 Plan Process and Timeline

During the data collection process, MWM created a list of over 130 potential efficiency and conservation measures derived from analyzing existing water usage patterns and took into account the specific characteristics of the service area. Additionally, MWM examined pertinent literature and the practices of other agencies to identify potential measures for adoption by the City.

A preliminary screening process was conducted in collaboration with City staff to filter the 130-plus measures to 40 of the most viable ones. Then, a formal measure screening process was conducted with City staff and regional partners to further reduce the 40 measures to 19 selected for further evaluation. This process followed the methodology presented in the American Water Works Association Manual of Practice, *M52 Water Conservation Programs – A Planning Manual* (AWWA, 2017).

The evaluation primarily included measures aimed at making existing residential and business customers more water efficient. In collaboration with the City, the 19 measures were refined and integrated with seven additional “enhanced” measures identified as strong candidates for potential future enhancement. Finally, a detailed economic analysis for all measures was performed in the DSS Model.²

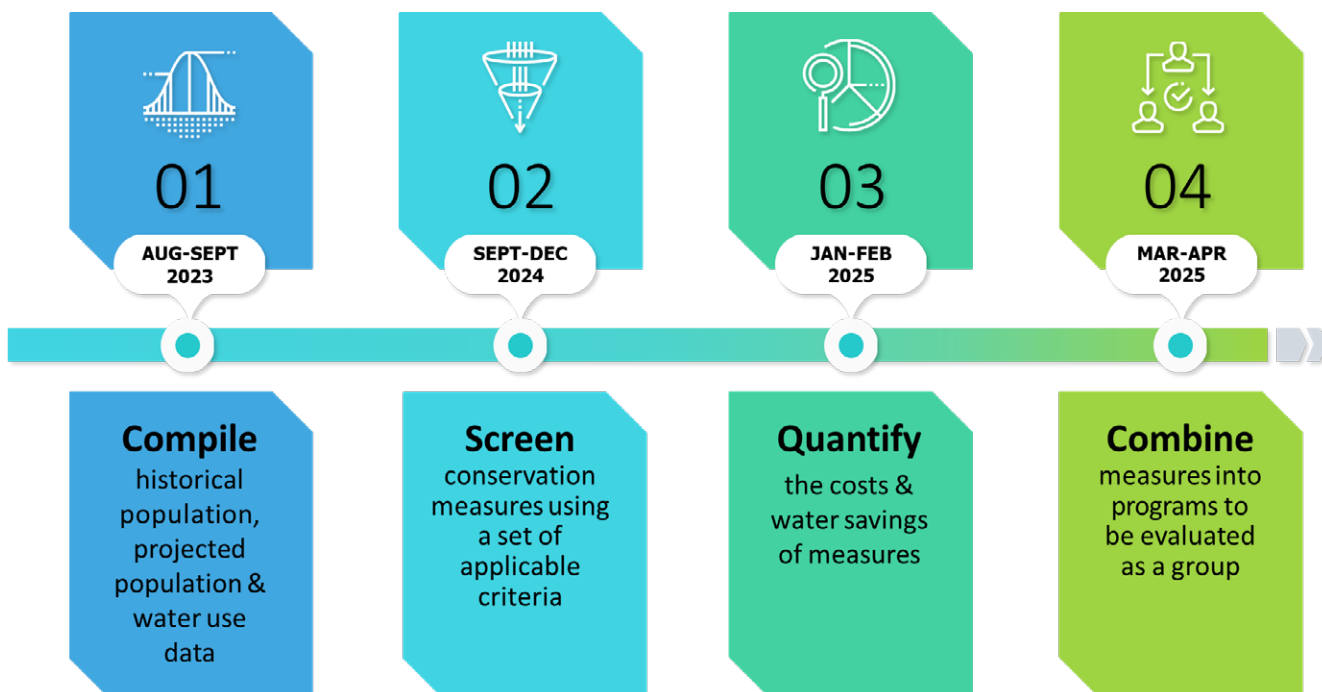
Following analysis, the measures were grouped into three programs representing the current conservation program and two alternatives. These programs were developed in collaboration with the City and are outlined below:

- **Program A** – Current water efficiency and conservation measures.
- **Program B** – Optimized program of the most cost-effective measures.
- **Program C** – Expanded program where all enhanced and new measures were analyzed to gauge the maximum estimated potential savings.

Assumptions and results for each of the 26 individual measures and three programs (A, B, and C) are described in detail in Chapter 4 of this Plan.

Throughout the measure evaluation and analysis process, the City and MWM conducted multiple meetings, primarily to complete the DSS Model. In the DSS Model, measures are designed with identified fixture costs, applicable customer classes, length of implementation, measure life, administrative costs, end uses, end-use savings per replacement, and a target number or percentage of accounts per measure year. The figure below illustrates the data collection, measure evaluation, and analysis process.

Figure 1-3. Evaluation Process



Note: Measures were combined into programs, which were then reviewed by the Water Forum from May through June 2025; feedback was added to the draft Plan in July 2025.

This Plan was prepared following completion of the DSS Model and selection of Program B for implementation. The analysis is intended to guide the City's conservation program budgeting and staffing, and to provide a strategy for complying with state legislation (described in more detail in Chapters 3, 4, and 5).

² The DSS Model is an “end-use” model that breaks down total water production (water demand in the service area) to specific water end uses, such as plumbing fixtures and appliance uses. It uses a bottom-up approach that allows for multiple criteria to be considered when estimating future demands, such as the effects of natural fixture replacement, plumbing codes, and conservation efforts. It also may use a top-down approach with a utility prepared water demand forecast. More information on the DSS Model can be found in the Plan appendices.

2. Overview of City’s Water Demand

This section summarizes the production and consumption data used to evaluate demand trends within the service area to assess the impact of conservation efforts. For this analysis, total retail water production and consumption (metered use) data was analyzed for the period from January 2020 through December 2024 to evaluate historical water demand trends. Monthly water production data, measured at their respective sources, was available from July 2016 through December 2024 and represented the total volume of water produced by the City. Production figures include all retail water deliveries, real and apparent losses, and authorized non-revenue uses (e.g., system flushing).

2.1 Historical and Projected Water Demand

As part of the DSS Model development, the MWM team reviewed and validated data to ensure consistency with historical records and logical alignment with known trends. This included verifying consumption and account data provided by the City, as well as confirming the number and types of customer accounts across the service area. This quality assurance process helped ensure that the Model reflected an accurate picture of historical and current water use. Figure 2-1 shows an estimate of residential water consumption in gallons-per-capita-per-day (GPCD) from 2020 to 2024 as well as total estimated population and total consumption (in million gallons) for the same time frame. While population has remained relatively constant and had periods of slow growth in the last few years, residential consumption and total consumption have experienced decreases, likely in response to drought conditions (2022) followed by a wet year (2023). The increase in 2024’s residential consumption is likely due to a statewide declaration that the drought was over, a resultant drop in statewide messaging, and a decrease in enforcement that was tied to a declared drought stage. In addition, 2024 appeared to have been a hotter summer with higher summer peak temperatures as compared to 2023. Overall, the trends depicted in this chart are aligned with what is expected given the varied weather conditions over the past few years and the general trends that are identifiable for the City (as shown previously in Figure 1-1).

Figure 2-2 illustrates total retail production using the data from this analysis. Seasonal demand patterns are evident, with peak summer use more than twice that of winter volumes.

Figure 2-1. Population and Residential Consumption, 2020-2024

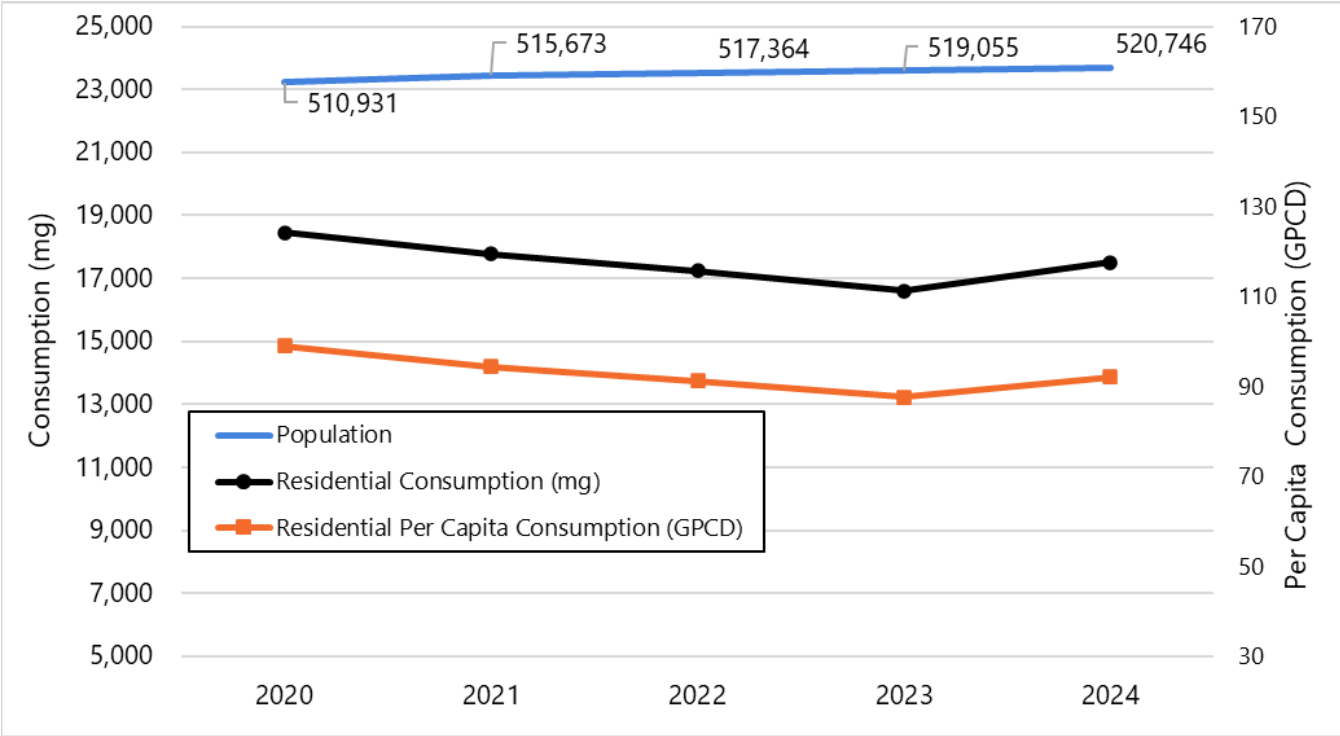
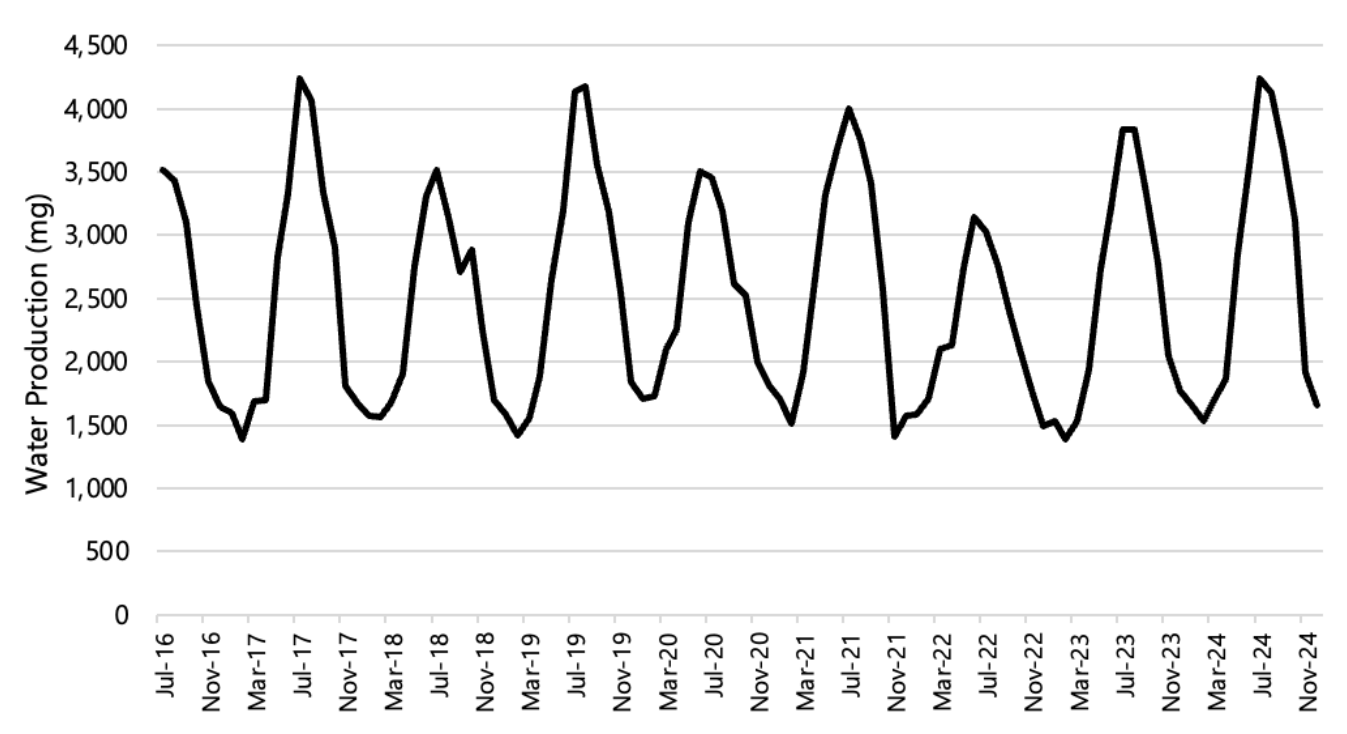


Figure 2-2. Total Retail Production (2016-2024)



It should be noted that demand projections were not produced as part of the peaking analysis completed for this Plan. At the direction of the City, the water demand projections developed in the 2023 Water Supply Master Plan (WSMP) were matched to ensure consistency across modeling and reporting efforts.

The City has a variety of customer categories utilized in their billing system. This Plan organizes users into the following six categories: Single Family Residential, Multifamily Residential, Commercial/Industrial, Institutional, Landscape Irrigation and Other. Figure 2-3 illustrates the breakdowns of water use within the City's retail service area based on water use data from 2020-2024. About half of total annual water use occurs in single family homes followed in magnitude by commercial and industrial connections, and multifamily housing.

Figure 2-3. Consumption by Retail Customer Category

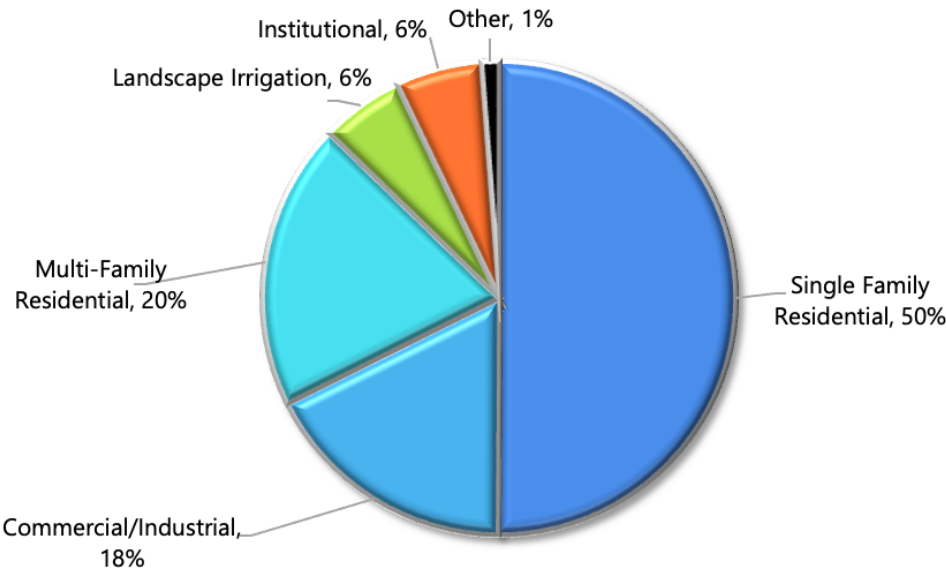
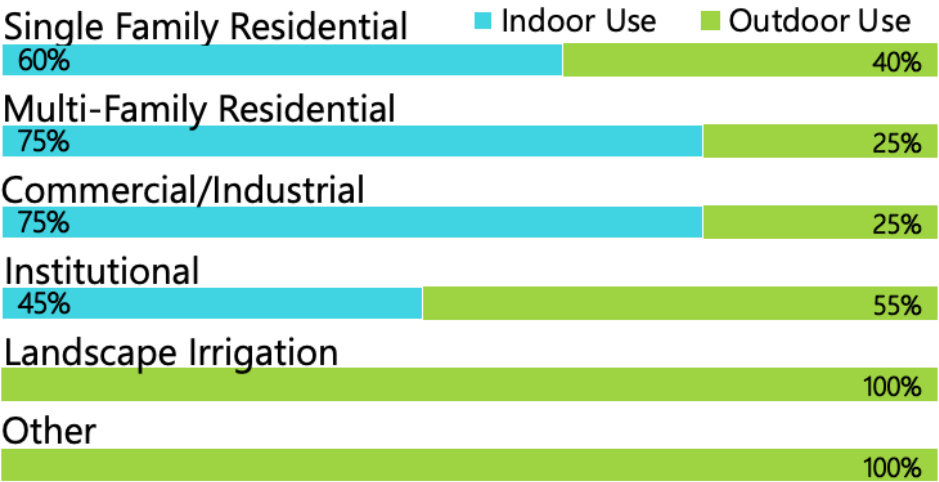


Figure 2-4 presents the breakdown of retail water use into indoor and outdoor components, based on the assumption that indoor water use is approximately equal to the lower outdoor consumption observed during winter months when irrigation is typically off. While some outdoor use may still occur in winter from limited watering or irrigation system leaks, this is assumed to be minor, accounting for less than 5-10% of average winter demand. The lowest winter month's consumption was therefore

used to represent indoor water use in customer categories that reflect both indoor and outdoor demands (Single Family, Multifamily, Commercial/Industrial, and Institutional). The Landscape Irrigation and Other categories were assumed to represent outdoor use only. This analysis provided insight into historical water use patterns to guide water conservation planning by identifying end uses with the highest overall consumption.

Figure 2-4. Indoor vs. Outdoor by Customer Category



Note: Indoor and outdoor water use percentage values have been rounded to the nearest 5%.



3. California Urban Water Use Objective

This section presents background information about the requirements put forth in the California “Making Water Conservation a California Way of Life” Regulation (Regulation) which was one of the primary drivers for developing this Plan. As stated in the introduction, one of the principal purposes of this Plan is to assess if the City is on track to meet the Urban Water Use Objective (UWUO) standard in future compliance years with its current estimated demand, growth projections, and conservation program. The results of the Plan analysis and proposed roadmap for compliance moving forward are presented in Chapters 4 and 6.

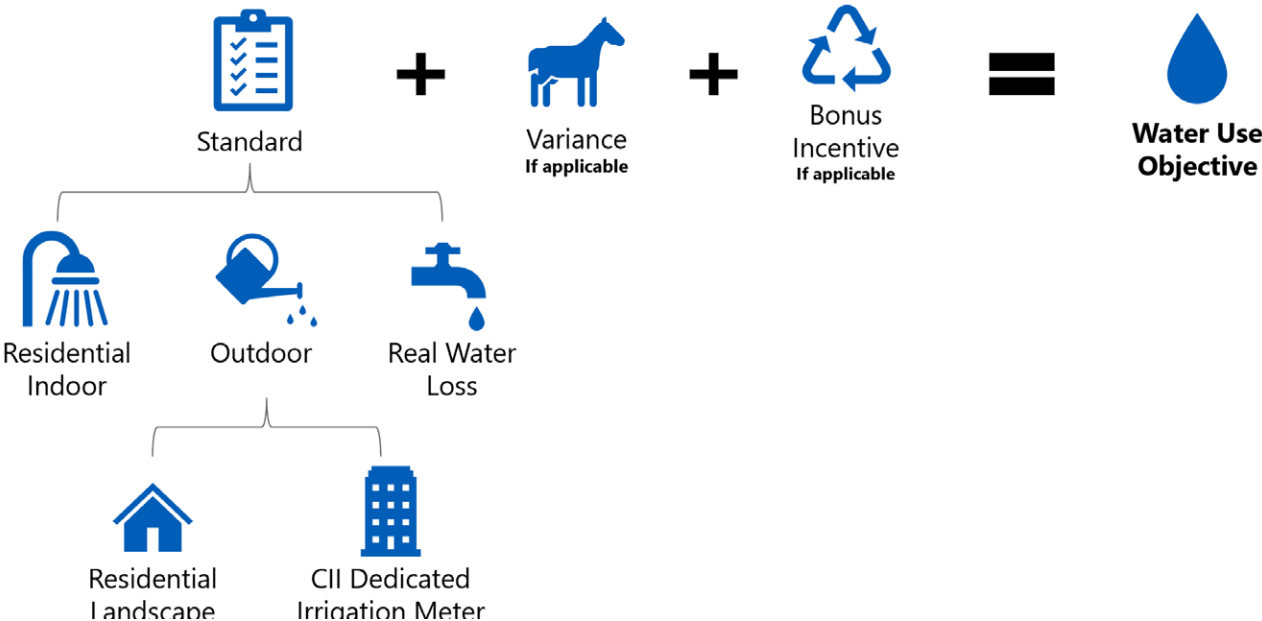
3.1 Regulation Background

In 2018, the California Legislature passed AB 1668 and SB 606. This legislation directed the State Water Resources Control Board (SWRCB) to adopt standards to encourage efficient urban water use. After six years of development, the “Making Water Conservation a California Way of Life” Regulation was adopted in 2024 and responds to the direction received in AB 1668 and SB 606. The Regulation establishes a quantitative volumetric target for residential and landscape water use referred to as the UWUO, in addition to performance measures required for the commercial, industrial, and institutional (CII) sectors. Annual reporting on the Regulation was required beginning January 1, 2025. Compliance is required beginning January 1, 2027, and is measured based on the various standards and CII performance measures in effect for the reporting period. The standards and performance measures have various effective dates over the course of the next fifteen years.

3.2 Urban Water Use Objective

The Regulation requires urban water suppliers to comply with a UWUO that is calculated annually. The calculation is based on local characteristics and standards for residential indoor and outdoor use, outdoor use from dedicated irrigation meters (DIM), water loss, a bonus incentive for potable reuse, and variances. The standards for indoor and outdoor use have become more restrictive over the 2025-2040 implementation period, requiring urban water suppliers to meet stricter water use budgets as time progresses. All the targets change for UWUO reporting on July 1st of the fiscal year (FY) except for the indoor Regulation which changes on January 1.

Figure 3-1. Breakdown of Urban Water Use Objective Components



3.2.1 Residential Indoor Water Use Standard

The Residential Indoor Water Use budget component of the UWUO is calculated by multiplying the applicable gallons-per-capita-per-day (GPCD) consumption standard by the supplier's service area population and by the number of days in the year. The GPCD standards are utilized to calculate the Residential Indoor Water Use budget and decrease over time, starting at 47 GPCD between Jan 2025 and Dec 2029 and decreasing to 42 GPCD by Jan 2030 and beyond.

3.2.2 Residential Outdoor Water Use Standard

Each supplier's efficient Residential Outdoor Water Use budget is calculated by multiplying the standard, also known as a landscape efficiency factor (LEF), by net evapotranspiration (Net Eto), by the square footage of residential irrigable irrigated landscape area, and by a conversion factor of 0.62.

Landscape Efficiency Factor: The LEF is used to indicate the amount of water a supplier may need to deliver to maintain healthy and efficient landscapes across the supplier's service area. A higher LEF value corresponds to higher water-using, less efficiently irrigated landscapes; a lower LEF value corresponds to lower water-using, more efficiently irrigated landscapes. The lower the standard, the less supplier-delivered water would be budgeted for outdoor use. The LEF values used to calculate the Residential Outdoor Water Use budget will be lowered over time and are summarized in Table 3-1. Ultimately, landscapes will need to transform to those that need less water over time. For new construction landscape areas, the applicable LEF factor will be 0.55. Residential special landscape areas (SLAs) will be granted an LEF of 1.0. Residential SLAs include pools, spas, water features, areas of solely edible plants, and areas irrigated with recycled water. Areas planted with non-functional turf (NFT) are not considered SLAs.

Figure 3-2. Formula for Residential Indoor Use Budget

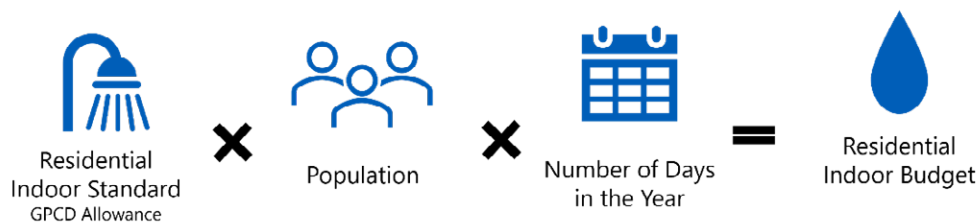


Figure 3-3. Formula for Residential Outdoor Use Budget

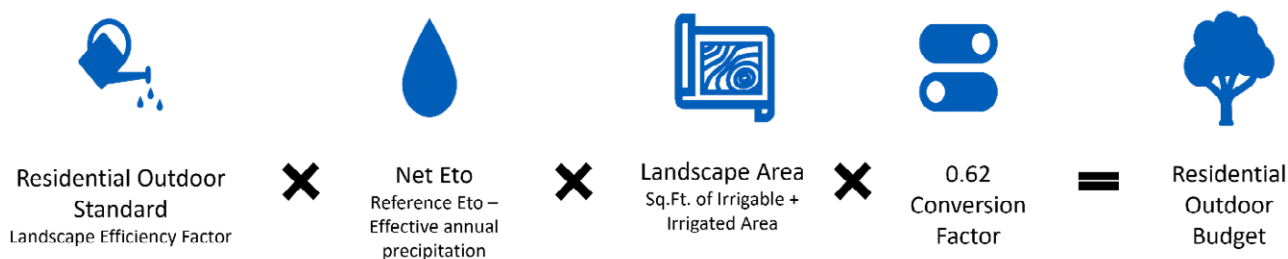


Table 3-1. Landscape Efficiency Factors

Year*	Landscape Efficiency Factor (LEF) for Existing Landscapes	Landscape Efficiency Factor (LEF) for New Development	Landscape Efficiency Factor (LEF) for Special Landscape Areas
2025-2034	0.8	0.55	1.0
2035-2039	0.63	0.55	1.0
2040-onward	0.55	0.55	1.0

*Targets change for UWUO reporting on July 1st of the listed years.

Net Evapotranspiration and Landscape Areas: The square footage of residential irrigable irrigated landscape area, reference evapotranspiration, and effective precipitation values were provided by the California Department of Water Resources (DWR) unless a supplier had produced alternative data that was, in terms of quality and accuracy, demonstrably equal or superior to what had been provided by DWR. If a supplier wishes to submit alternative data, they must do so by October 1st to be considered for inclusion in the following year's compliance report.

Additionally, a supplier can include budgets for temporary provisions for residential outdoor use (thereby increasing the Residential Outdoor Water Use Standard for the year) for the planting of new, climate-ready trees and the establishment of qualifying landscapes. Supporting information will need to be submitted and approved by DWR to receive temporary provisions.

3.2.3 Commercial Outdoor Water Use Standard

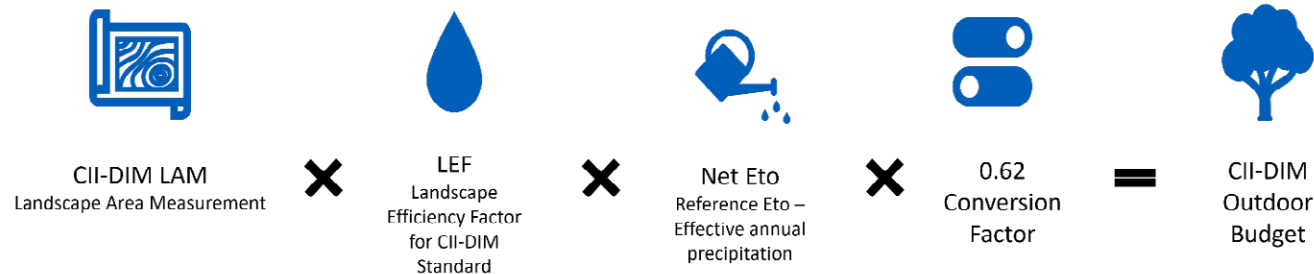
Like the Residential Outdoor Water Use Standard, the Commercial Outdoor Water Use Standard is also calculated by multiplying landscape area measurements (LAM) by the LEF, Net Eto, and Conversion Factor of 0.62.

Starting in July 2028, suppliers will calculate their Commercial Outdoor Water Use Standard for accounts with dedicated irrigation meters (DIMs). The DWR is partnering with NV5 Geospatial to develop landscape measurement datasets for CII parcels. These datasets are yet to be delivered to suppliers. Suppliers must still measure the total square footage of the irrigated area of CII landscapes with DIMs and SLAs. Suppliers must describe and substantiate how the area was quantified no later than July 1, 2028, and annually thereafter.

Prior to June 30, 2028, a supplier's Commercial, Industrial, and Institutional Dedicated Irrigation Meters (CII-DIM) water budget will be equal to actual deliveries reported to SWRCB. From July 1, 2028, to June 30, 2040, the LEF will be lowered from actual deliveries to 0.63. From July 1, 2040 onward, the LEF will be lowered to 0.45. For CII landscapes with DIMs that are special landscape areas, the applicable LEF will be 1.0.

It is important to note that the pending delivery of CII-DIM landscape area measurements insert significant uncertainty in estimating future UWUOs for the City, as a substantial component of the UWUO remains unknown until the CII-DIM LAM data becomes available.

Figure 3-4. Formula for Commercial Outdoor Use Budget



3.2.3.1 CII Mixed Use Meter Large Landscape Compliance

In addition to the Commercial Outdoor Water Use Standard which establishes a water use budget for commercial landscapes, the Regulation includes a requirement for conversion of large landscapes with mixed use meters (MUMs). MUMs are commercial, institutional or industrial meters that record both indoor and outdoor water usage. Suppliers are required to 1) identify all existing CII water users associated with large landscapes by June 30, 2027, or 2) identify all existing CII water users with large landscapes that exceed their water budget by June 30, 2029. Water budgets for large landscapes are to be calculated by multiplying the area of the landscape by net evapotranspiration by 0.63 (or for SLAs, by 1.0), and by a unit conversion factor of 0.62.

By June 30, 2039, suppliers will have to implement one of the following compliance options and maintain the process for compliance at a rate of 95% of all CII-MUM (mixed use meter) large landscapes.

- **Compliance Option 1** – Conversion to Dedication Irrigation Meters: Suppliers must install DIMs in large CII landscapes. For suppliers selecting this compliance option, all CII large landscapes with MUMs must be measured and reported by June 30th, 2027.
- **Compliance Option 2** – Use In-Lieu Technologies: Instead of installing DIMs, suppliers must implement at least one of the following methods: 1) water budget-based management programs without a rate structure, 2) water budget-based rate structure, or 3) installation of technologies that enable the supplier to identify, estimate, and analyze outdoor water use (such as AMI or remote sensing). In addition, suppliers must offer, at a minimum, one Best Management Practice (BMP) from the Outreach, Technical Assistance, and Education category and at least two BMPs from the Landscape category (see Appendix A for a breakdown of the activities that comply with these BMP categories).

The options above have different data requirements that will be due on June 30, 2039, when full compliance is required.

3.2.4 Water Loss Standard

In 2022, a separate SWRCB regulation established system-specific standards for water losses (Cal. Code Regs., tit. 23, §§ 980-986). Suppliers will calculate their annual water loss budget by multiplying their system-specific standard by the number of days in the year and, depending on the units associated with the standard, by either the number of total service connections or the length of the distribution system in miles. Suppliers that own and operate multiple systems will calculate an annual water loss budget by summing the estimated efficient water loss budgets associated with each system. Suppliers must meet their Water Loss Standard starting January 1, 2028 (for data submitted for 2025-2027).

3.2.5 Bonus Incentive

When calculating a supplier's UWUO, a Bonus Incentive is available for those that deliver potable reuse water. This incentive increases the UWUO for that year by up to 15% for suppliers delivering potable reuse water produced at an existing facility. Alternatively, the Bonus Incentive may be up to 10% of the objective for suppliers delivering potable reuse water that was produced at all other facilities. This is referred to as the bonus incentive "cap." The Bonus Incentive is calculated as the total volume of potable water delivered to residential accounts and CII landscapes with DIMs as a percentage of all potable water deliveries multiplied by the supplier's individual potable reuse. If the City were to expand its current recycled water system to irrigate more landscapes and/or provide recycled water to commercial customers, this could count toward the Bonus Incentive. Should the City decide to move in this direction, it will discuss this option with the SWRCB to confirm the eligibility of future capital expansion projects.

3.2.6 Variances

Under the Regulation, a variance is an additional volume of water that an urban retail water supplier may request to add to its UWUO for a unique use that materially affects its UWUO. To qualify, the water use for an individual variance must account for at least 5% of the budget for the relevant UWUO standard. Examples of qualifying uses include:

- **Residential Indoor Water Use Standard:** Water use from 1) significant use of evaporative coolers, 2) significant fluctuations in seasonal population.
- **Residential Outdoor Water Use Standard:** Water used for 1) populations of horses and other livestock, 2) controlling dust on horse corrals or other animal exercise arenas, 3) irrigating agricultural landscapes that are within residential areas but have not been classified as irrigable irrigated by DWR, 4) responding to emergency events not including drought, 5) landscapes irrigated with recycled water containing high levels of total dissolved solids (TDS), 6) supplementing ponds and lakes to sustain wildlife as required by existing regulations or local ordinances, 7) irrigating existing residential trees.
- **Commercial Outdoor Water Use Standard:** Water use from 1) responding to emergency events not including drought, 2) irrigating landscapes with recycled water containing high levels of TDS, 3) supplementing ponds and lakes to sustain wildlife as required by existing regulations or local ordinances, 4) irrigating existing trees on CII landscapes with DIMs (beginning July 1, 2040).

A supplier must request a variance or temporary provision by October 1st preceding the reporting year. For example, to include a variance in the January 2026 report, a supplier must submit the variance request on or before October 1, 2025. Approved variances and temporary provisions may be included in the associated budget for up to five years. Variance and temporary provision approval constitutes approval of both methodology and data. To request approval to include additional area beyond that calculated by DWR, SLAs, and variances, the supplier would be required to provide information quantifying and substantiating each request (such as demonstrating that the amount of water requested was delivered by the supplier for the requested use) and a description of efforts to prioritize water for existing trees.

3.3 CII Performance Measures

In addition to compliance with the calculated UWUO, the City must implement CII performance measures. The performance measures were developed by SWRCB to address water use associated with the business community but are not a quantifiable standard since CII water use efficiency consists of many diverse industries, production rates, equipment, and other unique factors. The performance measures primarily focus on identification of the types of CII customers and implementation of BMPs which consist of offering various types of resources and programs to the CII customer sector.

The four performance measures are:

- **Identify Disclosable Buildings** – As defined by the California Energy Commission (CEC), Disclosable Buildings are buildings with 1) more than 50,000 square feet of gross floor area (all square footage within the exterior walls of the building), and 2) zero or more than 17 residential units. The owners of Disclosable Buildings are required to submit monthly energy use data annually to the California Energy Commission (CEC) via the Energy Star Portfolio Manager web portal. This performance measure requires all urban water suppliers to identify the number of Disclosable Buildings in their service area and to provide monthly water use data for at least the previous 12 months when requested by owners or owner agents of the buildings. The number of Disclosable Buildings identified was required to be reported no later than January 1, 2025. Water suppliers are required to report the number of Disclosable Buildings within their service area and the number of customers for which water use data has been provided annually by January 1st of each year.
- **CII Account Classification** – Water suppliers are required to classify CII customers according to the broad classification categories used by the United States Environmental Protection Agency’s Energy Star Portfolio Manager tool. All CII customers must be classified into the 22 designated categories by July 1, 2027. The California Water Efficiency Partnership (CalWEP) CII Classification Guidebook is a valuable resource that the City can refer to when reviewing classification method(s) and producing the required output for compliance with the Regulation.

- **Identify High Volume Users** – The Regulation requires identification of high-volume CII water users into one of three compliance options, each with an associated deadline. Option 1 requires identifying existing CII users who fall at or above the 97.5th percentile for CII water use, as well as those at or above the 80th percentile for CII water use, with a compliance deadline of June 30, 2025. Option 2 expands this analysis by requiring classification of CII customers and identifying those at or above the 97.5th percentile and the 80th percentile within each classification category (from the CII Classification measure described). This option allows for a later compliance date of June 30, 2027. Option 3 extends the deadline further to June 30, 2029, and requires the development and application of Key Business Activity Indicators (KBAs) to assess inefficiency within CII classification categories. While Options 2 and 3 provide additional time and analytical detail, it is recommended that the City proceed with Option 1, as it is the most straightforward to implement and the least resource intensive.
- **Implement Best Management Practices for High Volume Users** – Water suppliers are required to design resources and implement water efficiency programs from five CII-BMP categories:
 1. Outreach, Technical Assistance, and Education
 2. Incentives
 3. Landscape
 4. Collaboration and Coordination
 5. Operational

Two BMPs from each category must be offered to the top 97.5th percentile of CII users and one BMP from each category must be offered to the top 80th percentile of CII users. Singular BMPs can address multiple categories. Suppliers must have a conservation program that meets the BMP requirements in place by 2039, and progress towards compliance must be reported annually.

Table 3-2. CII Categories for Classification

Energy Star Portfolio Manager Categories			SWRCB Categories
Banking/Financial Services	Lodging/Residential	Retail	CII Laundries
Education	Manufacturing/Industrial	Services	Landscapes with Dedicated Irrigation Meters (DIM)
Entertainment/Public Assembly	Mixed Use	Technology/Science	
Food Sales and Service	Office	Utility	Water Recreation
Healthcare	Parking	Warehouse/Storage	Car Wash
Public Services	Religious Worship	Other	

Source: Energy Star website: <https://www.energystar.gov/buildings/benchmark/understand-metrics/property-types>

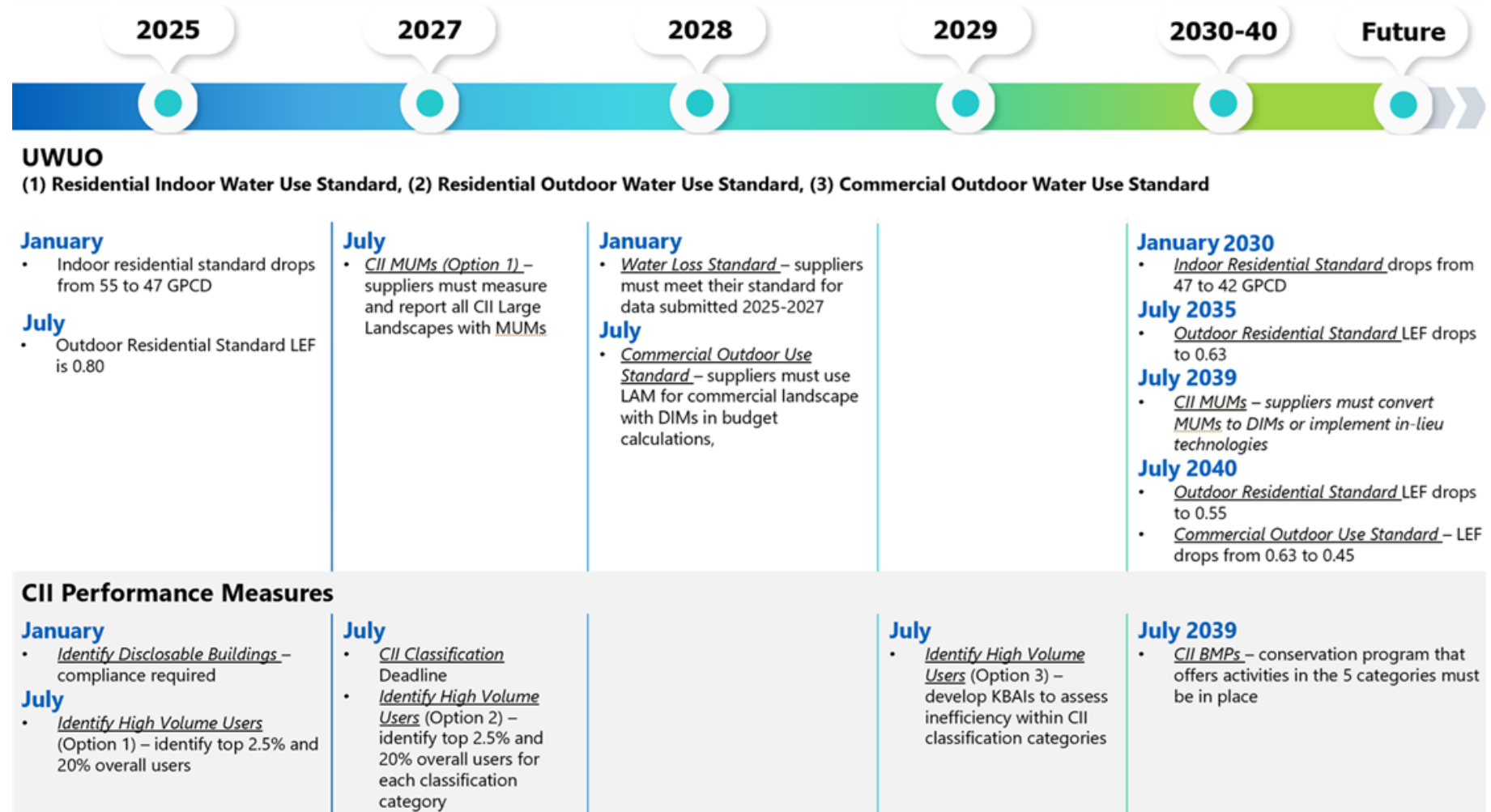
3.4 Reporting and Compliance Schedule

Reporting on the Regulation started in 2025, and supplier water use is expected to be in compliance with the UWUO starting January 1, 2026. The City submitted its first report in December 2024, the results of which are provided in Appendix A. Beginning in 2026, SWRCB may issue conservation orders to suppliers that are not in compliance and beginning in 2027, SWRCB may impose administrative civil liabilities for non-compliance with the UWUO. The Regulation also includes a “no-back-sliding” provision requiring that each supplier’s UWUO remain at or below its 20 x 2020 water efficiency target (SB X7-7). This earlier mandate required urban water suppliers to reduce water use by 20% from a 2010 baseline by 2020. The UWUO required by the Regulation must be below the urban water supplier’s SB X7-7 target. If the UWUO is higher than the SB X7-7 target, it is capped at the SB X7-7 target. The City is currently well below its SB X7-7 target as reported in its UWMPs (see the City’s 2020 and 2025 UWMPs).

Since the various standards decrease over time, compliance is based on the applicable standards that are in effect for each reporting year and is assessed based on the total UWUO, not on each individual component. The timeline in Figure 3-5 shows the reporting and compliance schedule for the various requirements and highlights the differing effective dates for the CII performance measures and BMP implementation depending on the selected options. The results of a detailed analysis of the City’s current practices and additional actions required to comply with the Regulation components are presented in Section 4. The City submitted its first report on January 1, 2025, and is compliant with the first-year reporting requirements.



Figure 3-5. Making Water Conservation a California Way of Life Compliance Timeline



Source: Adapted from California Water Efficiency Partnership, CII Performance Measures Cut Sheet (2025)

4. Conservation Program Analysis

This chapter describes the City's historical and current conservation program and the analysis of measures that were evaluated as part of developing this Plan.

4.1 Historical and Current Conservation Program

Since the 1990s, the City has offered a variety of indoor and outdoor water efficiency services, ranging from showerhead swap outs to commercial spray valve distribution. Its long-standing partnerships with Sacramento Municipal Utility District (SMUD), RWA, and Sacramento Area Sewer District have brought immense value to its programs through collaboration and funding support. The City currently maintains a robust program including the rebates and services listed in Figures 4-1 and 4-2. The City's ongoing measures and rebate programs can be found on the City's website (<https://www.cityofsacramento.gov/utilities/water-conservation>) and are included in the modeled measures list in the next section.

Figure 4-1. Current City of Sacramento Indoor Rebates and Services

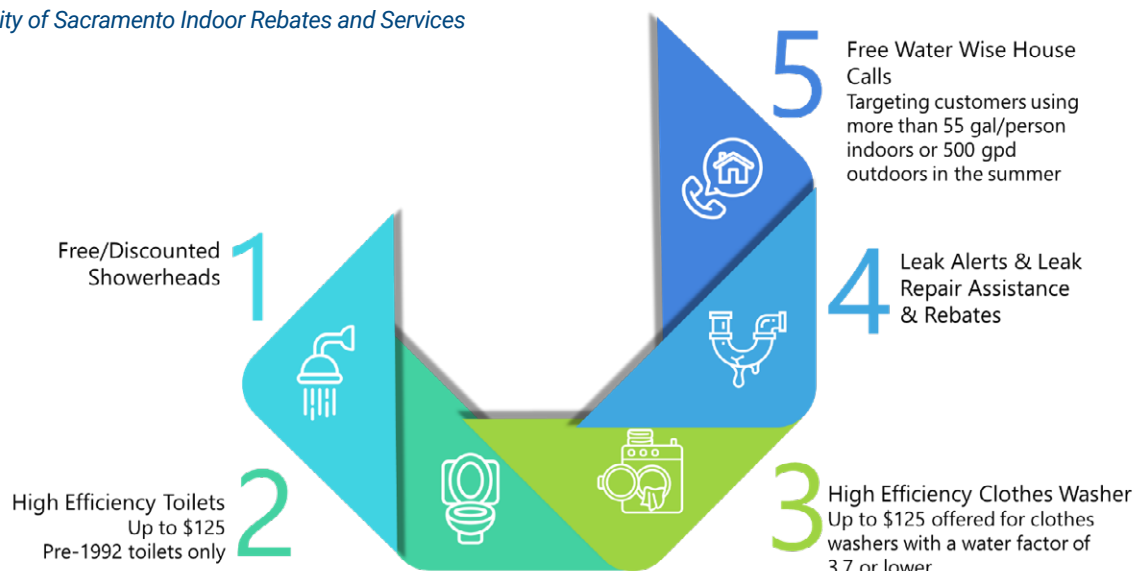
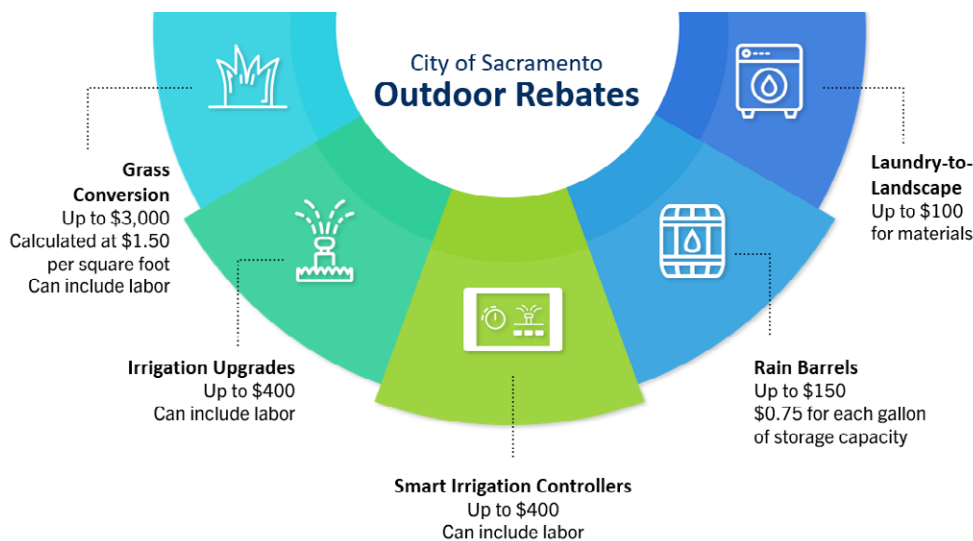


Figure 4-2. Current City of Sacramento Outdoor Rebates

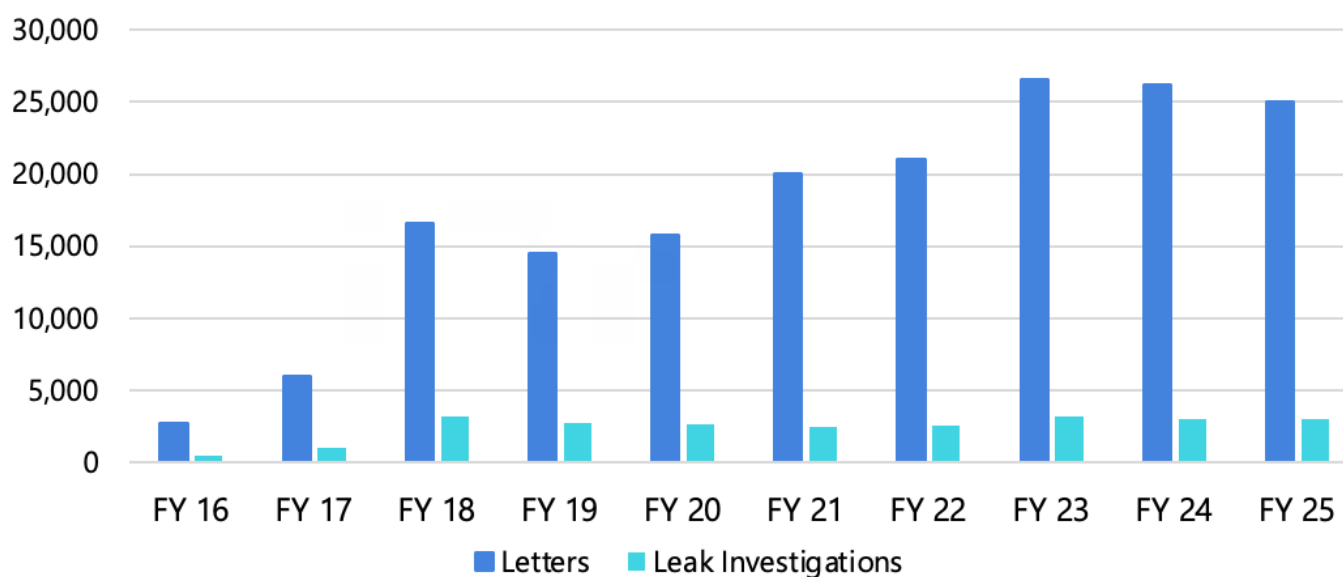


AMI Leak Alerts

For over 10 years, the City has sent out AMI Leak Letters to alert customers of potential leaks. Figure 4-3 shows the number of leak letters and leak investigations conducted in recent years since AMI was implemented. The process was automated in late 2017, and the City now sends out an average of 25,000 leak letters per fiscal year. Each letter includes a prompt to sign up for the City's online portal, estimates the amount of water lost, and offers a free site visit for a leak inspection. Customers can also opt in to receive the leak alert notification via text or email by signing up through the City's website (<https://mywater.cityofsacramento.org/login>). About 10% of customers call the conservation department after receiving a leak letter to request staff assistance in finding the source of their leak.

The threshold for receiving a leak alert via a notification letter varies from winter to summer. In the winter, the letter is often for a leak lasting 3 days at a rate of 150 gallons per day, or just over 6 gallons per hour (6.25 gph). In the summer, the leak threshold is often set at four continuous days at a rate of 250 gallons per day (just over 10 gph). The thresholds are set based on typical household water use patterns, professional judgment about what constitutes a likely leak, and the capacity of City staff to respond to follow-up calls and site visits. The thresholds are intentionally conservative in minimizing false positives while ensuring that if roughly 10% of notified customers call in for assistance, adequate staff time is available to provide support. Data was collected on the savings achieved from leak notifications at the City, through the Alliance for Water Efficiency study on AMI-enabled Proactive Leak Notification Programs.³ This study found that the City's single-family and small multifamily leak notification program resulted in about 50% reductions in water volume per meter on average.

Figure 4-3. City of Sacramento AMI Leak Alerts, FY 2016–2025



³ <https://allianceforwaterefficiency.org/resource/smart-practices-save-water-evaluation-ami-enabled-proactive-leak-notification/>

Leak Free Sacramento

The Leak Free Sacramento Program depicted in Figure 4-4 began in 2018 as the first of three groundwater sales transfers (2018, 2020 and 2022) that specifically was to fund water efficiency within the City's disadvantaged communities (DAC). This program is available to homeowner occupied single family customers with leaks that are 25 gph or larger who live within the City's Disadvantaged Communities or are signed up for the Sacramento Utility Rate Assistance (SURA) program. Most of the projects involve a customer main replacement, but some involve hot water line repairs. The goal is to fund 40-50 projects per year utilizing grant funding, and the maximum repair amount is \$7000 per customer.

Leak Repair Assistance Rebate

The Leak Repair Assistance Rebate program started through a grant in FY 2021 and has been internally funded for the last two years. Rebates are available to repair single family and small multi-family leaks and vary depending upon the leak size. Leaks of less than 25 gph are eligible to receive a rebate of up to \$250 and licensed leak detection may be included. Leaks of 25 gph or more are eligible to receive up to \$500 for leak detection and repair. In FY 25, there were 55 completed projects, compared to 48 in FY 24 and 32 in FY 23.

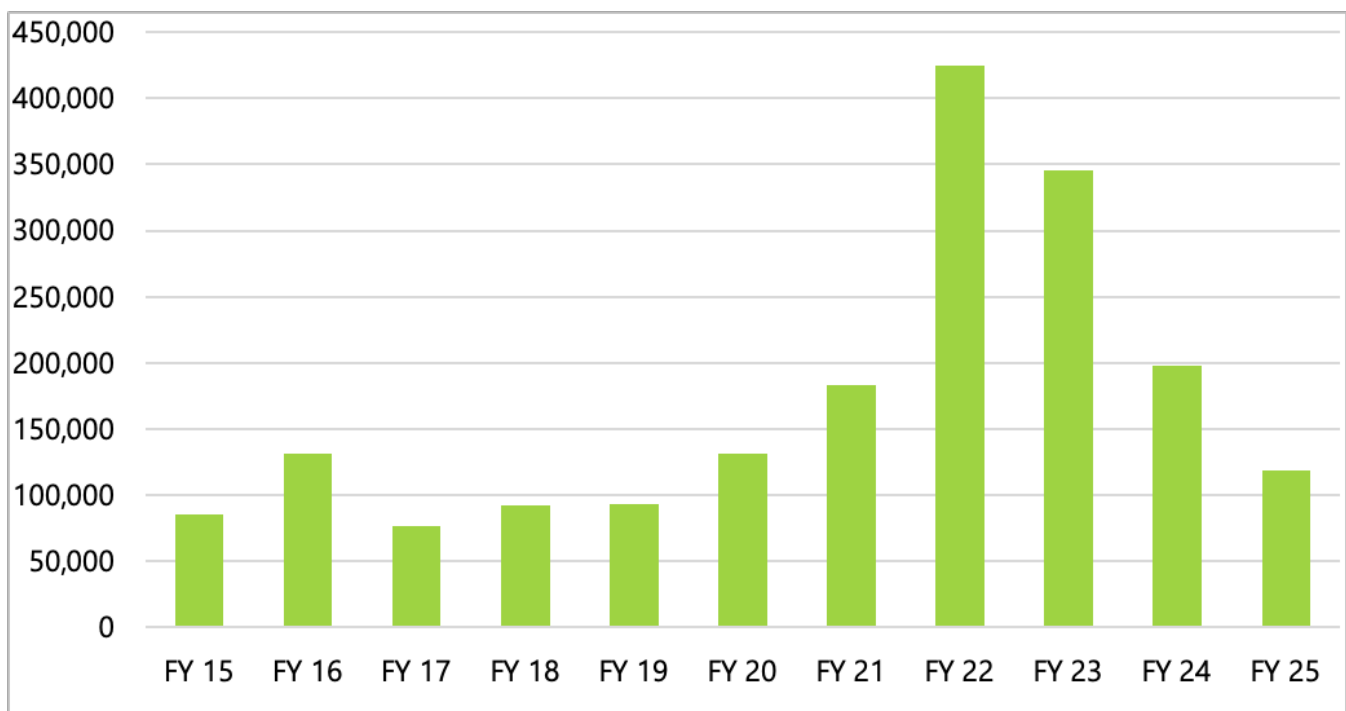
Turfgrass Conversion Rebates

The City's Turfgrass Conversion Rebate program provides customers with \$1.50 per square foot of grass converted to low water use plants. Since the program began in fiscal year (FY) 2015, 1,438 turfgrass conversion projects have been completed, involving just under 1.9 million square feet of turfgrass. When the rebate was doubled between June and December 2021 from \$1.50/square foot to \$3.00/square foot, participation dramatically increased, as displayed in Figure 4-5.

Figure 4-4. Leak Free Sacramento Program



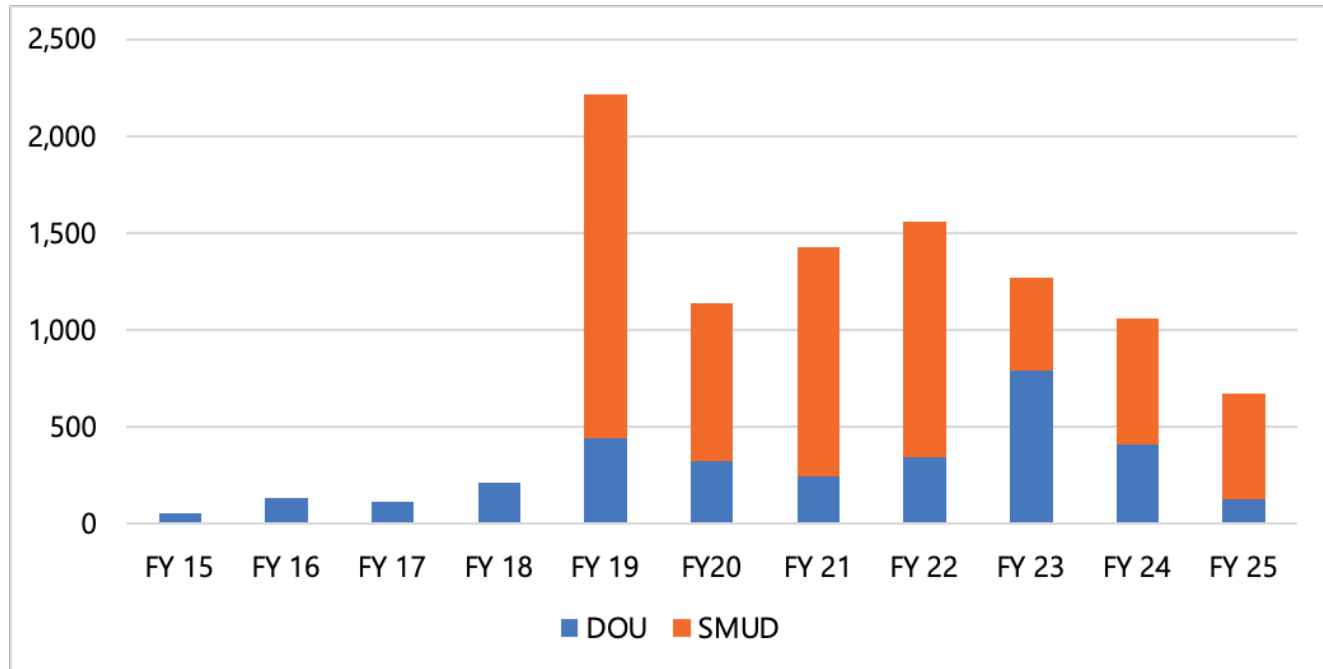
Figure 4-5. City of Sacramento Turfgrass Transformations, FY 2015–2025



Smart Controller Rebates

The City began providing Smart Controller Rebates in FY 2015 and has since partnered with SMUD to increase participation by providing instant rebates. More than 3,000 have been provided over the past 10 years by Sacramento Department of Utilities (DOU) separate from the SMUD instant rebates, with an additional 6,725 instant rebates to date since the partnership with SMUD launched in October 2018 (Figure 4-6).

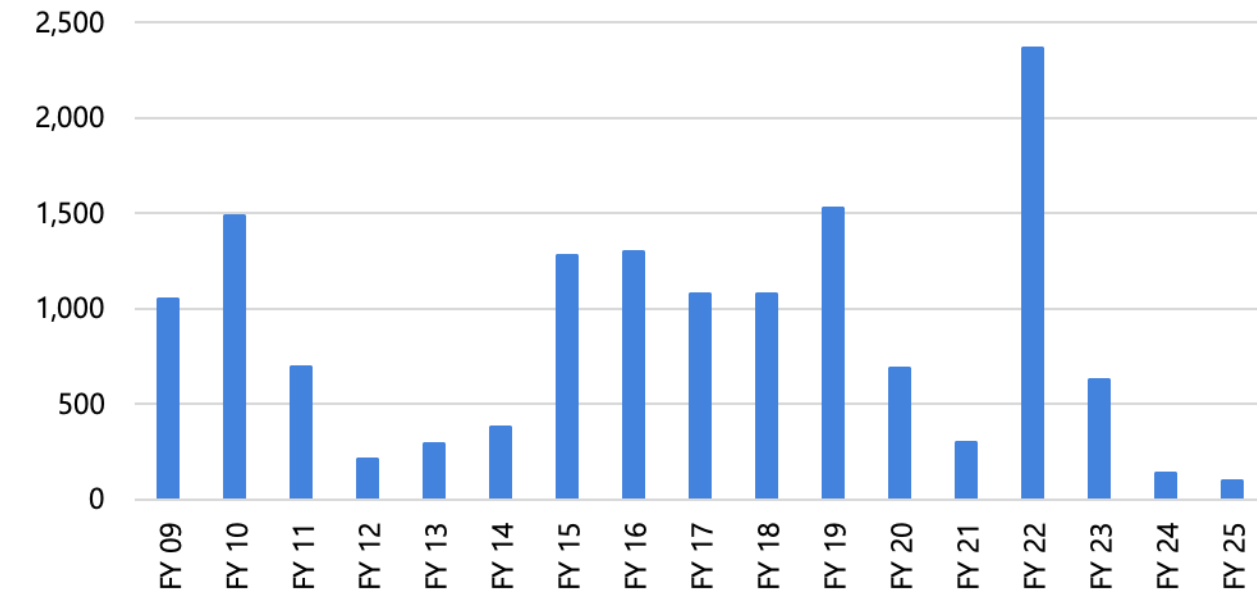
Figure 4-6. City of Sacramento Smart Controller Rebates, FY 2014–2025



High Efficiency Toilet Rebates

In partnership with RWA and Sacramento Area Sewer District, the City has offered High Efficiency Toilet Rebates to both residential and nonresidential customers since 2009. Shifts in participation have been seen over the years, with a more recent drop in the past two fiscal years (Figure 4-7).

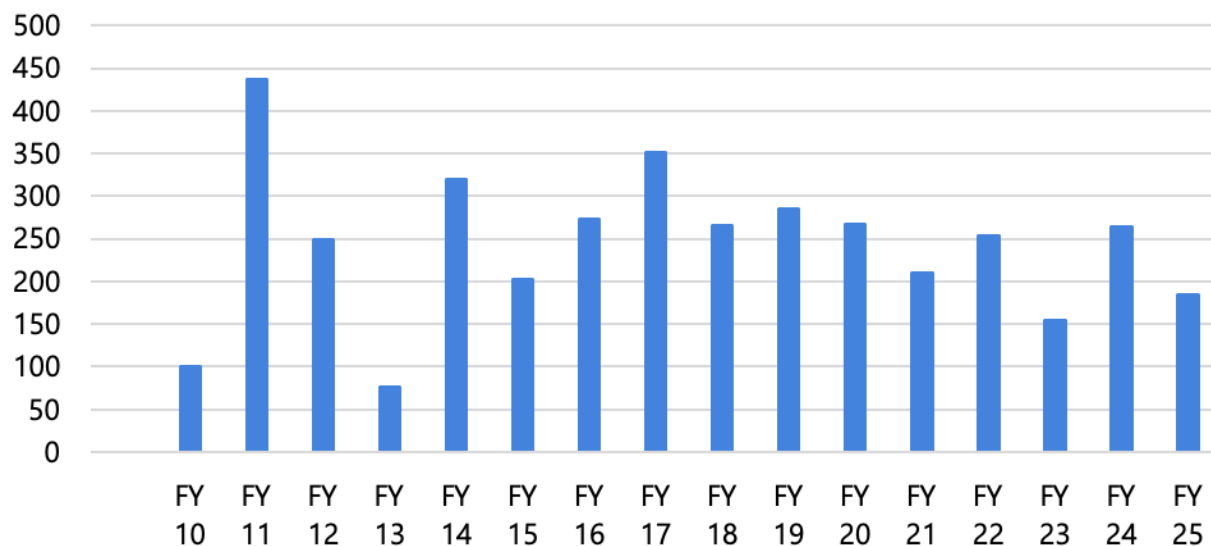
Figure 4-7. City of Sacramento High Efficiency Toilet Rebates, FY 2009–2025



High Efficiency Clothes Washer Rebates

The City has also offered High Efficiency Clothes Washer Rebates since 2009, though participation has been historically smaller compared with toilets. On average, the City rebates about 240 clothes washers annually, with some variance based on the year (Figure 4-8).

Figure 4-8. City of Sacramento High Efficiency Clothes Washer Rebates, FY 2010–2025



Rainbarrel and Graywater Rebates

The City has offered both a rainbarrel rebate and a simple laundry-to-landscape graywater rebate since 2018. The rainbarrel rebate is up to \$.75 per gallon stored, up to 200 gallons captured (\$150) while the graywater rebate is up to \$100. While only 183 rainbarrel rebates have been issued since 2015, nearly eighteen hundred were distributed through annual events. Between 2017 and 2023, a total of 1,761 rainbarrels were distributed to Sacramento residents through a series of annual events that shifted in 2020 to a drop-ship program where the vendor mailed the rain barrel(s) to qualified customers. To date, there have only been three graywater rebates, but none since 2021.

4.2 Conservation Measure Evaluation

This section presents the City's conservation measure evaluation process to support its goal of developing a Plan that would result in the greatest ease and efficiency of program administration, the lowest cost of implementation, the greatest water savings, and the best alignment with the new Regulation.

Experience across many utilities has shown that there is a reasonable limit to the number of measures that can be effectively implemented within a service area at any given time. Historically, programs that consist of too many measures are difficult to implement successfully. Therefore, prioritization of measures is important both as an outcome of this planning effort and as the program is implemented.

The approach to program implementation is viewed as a "dynamic and evolving" process where opportunities may arise and be adopted as new technologies become available. Measure timelines can also be adjusted, with the recognition that doing so may impact the savings objectives.

An important step in updating the City's water conservation program included identification of new measures that may be appropriate and the screening of these measures to a short-list for detailed evaluation (benefit-cost analysis). A thorough measure screening process was necessary to scale to a reasonable short-list of measures for evaluation in the DSS Model. This evaluation was specific to the factors unique to the City's service area, such as water use objectives, characteristics, and demographics.

Certain terms that will be used when describing aspects of the measure evaluation include:

Utility Costs – costs that the City as a water utility will incur to operate the measure, including administrative costs.

Utility Benefits – the avoided cost of producing water at the identified rate.

Customer (Community) Costs – those costs customers will incur to implement a measure in the City's conservation program and maintain its effectiveness over the life of the measure.

Customer (Community) Benefits – the additional savings, such as energy savings, resulting from reduced use of hot water. These savings are additional as customers would also have reduced water bills (since the utility costs and benefits transfer to the customers).

Community Costs – includes Utility Costs plus Customer Costs.

Community Benefits – includes Utility Benefits plus Customer Benefits.

Present Value (PV) of Utility and Community Costs and Benefits (\$) – the present value of the program period time stream of annual costs or benefits, discounted to the base year.

Utility Benefit to Cost Ratio (BCR) – PV of Utility Benefits divided by PV of Utility Costs, over the program period.

Community Benefit to Cost Ratio – (PV of Utility Benefits plus PV of customer energy savings) divided by (PV of Utility Costs plus PV of Customer Costs), over the program period.

Water Utility Costs (\$) – the sum of the annual Utility Costs for the Program years. Utility costs include administrative costs and staff labor.

Cost of Savings per Unit Volume (\$/AF) – PV of Utility Costs over program period divided by the program period of water savings. This value is compared to the utility's avoided cost of water as one indicator of the cost-effectiveness of conservation efforts. Note that this value somewhat minimizes the cost of savings because program costs are discounted to present value, but water benefits are not.

4.2.1 Conservation Measure Screening and Selection

To support the development of a data-driven and regulation-compliant Water Efficiency and Conservation Plan, MWM and City staff undertook a structured process to screen and select individual measures for modeling. Using MWM's proprietary library of over 130 measures as a starting point, MWM created a tailored subset of measures to review with the City. Given that the major objective of the Plan was to meet requirements of the State of California's "Making Water Conservation a California Way of Life" Regulation, MWM included regulatory alignment information for applicable measures in the custom library to provide the City with context in determining which measures had the potential to contribute toward compliance.

During the pre-screening process, City staff provided input on current water efficiency and conservation activities and the practical feasibility of various measures. Based on this input, the initial measure list was refined to a shortlist of 40 measures that would be evaluated further through a structured voting process. To support the voting effort, MWM and City staff collaboratively developed five screening criteria that captured the most relevant decision-making considerations. These criteria were designed to reflect both regulatory and operational priorities. Following this, MWM convened a meeting with a broader group of key City staff and regional partners to introduce the measure screening voting and scoring process that follows the methodology presented in the American Water Works Association Manual of Practice, *M52 Water Conservation Programs – A Planning Manual* (AWWA, 2017). The screening criteria included the following (in no particular order or priority):

1. **Technology Market Maturity** – Refers to whether the technology needed to implement a water use efficiency measure, such as an irrigation control device, is commercially available and supported by the local service industry. A measure would be more likely to be included if the technology is widely available in the service area, and less likely to be included if the technology was not commercially available or not supported by the local service industry.

Technology Market Maturity – Refers to whether the technology is commercially available.

- **0 = Not available** (i.e., New product or innovation that is not mass produced at this time, or has not been widely tested for product quality or water savings).
- **3 = Can be obtained with effort** (i.e., Special order from a local store, online ordering).
- **5 = Readily available** (i.e., Can be purchased at multiple local stores).

2. **Diversity, Equity, and Inclusion (DEI)** – Considers customer equity and inclusion as well as whether one group or category of customers receives a benefit while another pays the costs (without receiving benefits). Consider commercial versus residential, income levels, renter versus owner, non-English speaking population outreach, convenience (rural, urban), economics, perceived fairness and/or aesthetics.

Diversity, Equity, and Inclusion: Equitable impacts on diverse populations.

- **0 = No DEI benefit** (i.e., Swimming Pool covers – typically a higher income amenity).
- **3 = Minor DEI benefit** (i.e., Toilet rebates – everyone has toilets, however full replacement cost not covered).
- **5 = Significant DEI benefit** (i.e., Low-income direct install program, multi-family programs targeted to renters).

3. **Reduces Peak Water Use** – Systems must be built for peak demand, increasing utility costs. This criterion evaluates whether the measure drives down maximum demand on the system, reducing peak water use. This is often applicable to outdoor irrigation in the summer.

Reduces Peak Water Use: Reduces usage during peak summer irrigation.

- **0 = No reduction to peak demands** (i.e., Indoor plumbing retrofit – inside only).
- **3 = Minor reduction in system peak demands** (i.e. Public information – helps educate the public on reducing summer water use).
- **5 = Significant reduction in system peak demands** (i.e., Cooling Towers, Turf replacement – very high water use during warm weather).

4. **Environmental Impact** – Whether the measure may have (usually) unintended, environmental impacts. For example, depending upon the required design elements, turf replacement programs may contribute to the heat island effect where areas with little to no landscaping suffer from increased temperatures. Some landscape renovations may involve an increase in artificial turf that contributes to microplastics in the soil and reduces habitat for insects and microorganisms that improve soil health. Increased driving has a carbon impact.

Environmental Impact: Program has environmental co-benefits.

- **0 = Neutral environmental impact** (i.e., allowing artificial turf to qualify for a landscape turf replacement program).
- **3 = Minor positive environmental impact** (i.e., low impact new development including rainwater harvesting, etc.).
- **5 = Significant positive environmental impact** (i.e., requiring native landscape transformation with pollinator habitat benefits).

5. **Water Savings Potential** – Refers to the water savings potential a measure has on an account-by-account basis as well as the anticipated adoption by the public. This is a qualitative assessment of expected water savings potential, understanding that actual savings will be quantitatively measured using the DSS Model.

Water Savings Potential: Expected volume of water saved.

- **1 = Low savings potential** (i.e., Residential dishwashers – small gallons/load).
- **3 = Medium savings potential** (i.e., Toilet retrofits – high level of saturation).
- **5 = High savings potential** (i.e., Water Loss – large volume of water).

MWM compiled and analyzed the screening results and presented the findings during a follow-up meeting. Measures with overlapping features, such as those targeting similar end-uses or involving similar implementation strategies, were consolidated into unified measure descriptions. Based on City feedback, a final meeting was held to confirm the finalized list of 19 measures selected for modeling. These measures were then carried forward to the next stage of evaluation, where detailed analysis was conducted to estimate water savings and costs. An additional seven “enhanced” measures were included

after discussion with City staff on potential improvements to current measures, creating a total of 26 measures for evaluation.

Table 4-1 presents the list of measures selected for evaluation/modeling. Information about the DSS Model analysis approach to measure unit costs, water savings, and market penetrations is in Appendix B. Actual measure inputs and assumptions used in the DSS Model to evaluate the water conservation measures selected by the City, and their results, can be found in individual measure screenshots provided in Appendix C.

Table 4-1. Final Measure List (Abbreviated Descriptions)

Measure ^a	Description
Single and Multi-Family Residential Financial Incentives for Irrigation and Landscape Upgrades	Currently offered by the City through the River Friendly Landscape Program, this measure provides rebates for residential customers who retrofit their landscapes with water efficient plants and/or upgrade to water efficient irrigation equipment.
Landscape Irrigation Restricted to Designated Days and Times^b	The City maintains a two day per week watering schedule from March through October, and a one day per week schedule between November and March. This is enforced by investigating reports that come into 311 and sending letters to customers watering on the wrong day and times. Wrong day and time watering is identified using AMI data and, in some cases, in-person patrolling for verification.
Commercial and Large Landscape Financial Incentives for Irrigation and Landscape Upgrades	Currently offered by the City through the River Friendly Landscape Program, this measure provides rebates for commercial and large landscape customers who retrofit their landscapes with water efficient plants and/or upgrade to water efficient irrigation equipment.
Outdoor Water Use Evaluations	The City currently offers outdoor water surveys for existing residential customers. All single family and multi-family residential customers are eligible for free landscape water surveys upon request. Surveys include a mix of in-person visits and remote calls.
Large Landscape Water Surveys^b	The City currently offers outdoor water surveys for existing multi-family and CII DIM customers with a minimum of ½ acre of irrigated area. All large multi-family residential, CII, and public irrigators of large landscapes are eligible for free landscape water audits upon request. The City currently conducts outreach for this measure through Waterfluence and performs surveys using in-house staff.
Enhanced - Water Budgeting/ Monitoring for Dedicated Irrigation Meters^b	In 2024, the City of Sacramento began a multi-year agreement with Waterfluence to track and provide feedback on irrigation water use (budget vs. actual) to site managers, property owners, and landscapers. This measure aims to help the City with increasing customer engagement for larger sites and increasing participation in water efficiency programs through sharing irrigation water use data and monitoring water use at these sites.
Partnership with Energy Utilities – Incentive	Current partnership in place with SMUD, the electric utility for City of Sacramento residents, offers incentives to customers to save both water and energy.
Residential Leak Repair Assistance Rebate	Currently offered by the City this measure provides a rebate to subsidize part of a leak repair for qualified single and small multi-family customers.
Leak Free Sacramento	Customer leaks can go uncorrected at properties where owners are least able to pay the costs of repair. This measure is funded through a groundwater substitution transfer and provides free leak repairs and water-efficient upgrades to eligible low-income single-family homeowners.
Water Loss Tracking^b	This measure models City utilities department time used for tracking and reporting water loss information as it relates to the California water loss standard and ties to the Urban Water Use Objective.
Public Outreach & Education^b	Public outreach efforts currently include direct advertisement buys as well as educational materials, community events, social media content, and City Express articles that are sent out to 250,000 email accounts. The public outreach efforts also include providing letters of suspected leaks to customers based on their AMI water meter data and outreach to increase engagement with the Badger customer engagement portal. This measure would continue indefinitely and evolve based on public participation and evaluation of long-term conservation targets.
Indoor Water Surveys	Indoor water surveys are currently offered for existing single family and multi-family residential customers, often virtually/remotely in response to a spike in water use.

Measure ^a	Description
Residential Plumber Initiated High Efficiency Toilet Retrofit Program^b	Licensed plumbers, pre-qualified by the Utility, would solicit customers directly. Qualified low-income customers would get new high-efficiency toilets (HETs) and other indoor fixtures installed for free by a pre-approved plumber under contract with the City. This program is designed for disadvantaged-qualified customers. This measure focuses on lowering indoor GPCD for compliance with the Urban Water Use Objective from the "Making Water Conservation a California Way of Life" Regulation.
Residential Clothes Washer Rebate	Currently offered by the City, this measure provides rebates for efficient clothes washing machines for residential properties, primarily single-family homes. This measure is currently administered by CalWEP and rebates are cost-shared with RWA. This measure is designed to sunset by 2028 when the new federal regulations begin.
CII Customized Top Users Incentives	This measure would provide a free water use assessment (otherwise known as water audit) to commercial, industrial, and institutional customers, followed by a free report where the Utility will present recommendations for efficiency upgrades. Financial incentives will also be provided after analyzing the benefit-cost ratio of the proposed project(s). Incentives are tailored to each individual site as each site has varying water savings potential. This measure aligns with CII BMPs for compliance with the Urban Water Use Objective from the "Making Water Conservation a California Way of Life" Regulation.
CII Water Savings Performance Program^b	The City of Sacramento provides a rebate of \$0.50/CCF (centum cubic feet) saved to CII sites within the service area. Water savings are estimated using the number of days operated per year and the expected life of the equipment (capped at 10 years). This measure aligns with CII BMPs for compliance with the Urban Water Use Objective from the "Making Water Conservation a California Way of Life" Regulation.
CII Rebates to Replace Inefficient Equipment^b	Currently offered by the City, this measure provides rebates to CII customers for a standard list of water efficient equipment. Incentives offered include x-ray machines, icemakers, air-cooled ice machines, steamers, washers, spray valves, efficient dishwashers, high efficiency toilets, high efficiency urinals, replacing once through cooling, and adding conductivity meters on cooling towers. This measure aligns with CII BMPs for compliance with the Urban Water Use Objective from the "Making Water Conservation a California Way of Life" Regulation.
Install High Efficiency Fixtures in Multi-Family (MF) & CII Buildings	This measure would install high efficiency fixtures in select multi-family, commercial, and institutional buildings. Replacements would include high efficiency toilets, showerheads, urinals, and faucet aerators. A water survey would be conducted as a pre-requisite to qualify for direct installation of fixtures. This measure aligns with CII BMPs for compliance with the Urban Water Use Objective from the "Making Water Conservation a California Way of Life" Regulation.
Enhanced - Residential Smart Landscape Rebates^b	For single Family (SF) and multi-Family (MF) customers with landscape, provide rebates for substantive landscape retrofits and/or installation of water efficient irrigation equipment upgrades through the River Friendly Landscape Program. Rebates contribute towards the purchase and installation of water-wise plants, compost, mulch, stormwater features like permeable hardscape and swales, and selected types of irrigation equipment upgrades. The City would offer a higher incentive rate due to partnerships and cost and resource sharing. This measure is an enhanced version of the Residential Financial Incentives for Irrigation and Landscape Upgrades measure above.
Commercial and Large Landscape Non-Functional Turf Outreach^b	In October 2023, the California State Legislature passed Assembly Bill 1572, which phases in a permanent ban on watering decorative grass or non-functional turf with potable water in commercial, industrial, and institutional settings. This includes areas within homeowners' associations (HOAs). This measure reflects the City conducting outreach about the ban to increase awareness and track compliance with the regulation which occurs in phases, completing in January 2029.
Enhanced - Residential Leak Repair Assistance^b	Provides a rebate to subsidize part of a leak repair at qualified single and small multi-family customers. This enhanced measure would utilize grant funding to increase the number of rebates provided and include Spanish translation efforts to reach additional customers. This measure is an enhanced version of the Residential Leak Repair Assistance measure above.
Enhanced - AMI Targeted Leak Free Sacramento^b	This enhanced measure targets accounts with leak alerts identified via AMI, especially large MF customers, and provides free leak repairs to eligible low-income single family and multi-family homeowners. This measure is an enhanced version of the Leak Free Sacramento measure above, using grant funding to fully cover customer leak repair costs and targets more sites annually. It will also expand the threshold for AMI to increase participation.

Measure ^a	Description
Enhanced - Water & Energy Partnership Rebates ^b	This measure would continue partnership with SMUD to offer incentives to customers to save both water and energy. The focus of this measure is peak demand reduction and involves considering a partnership with SMUD on their shade-tree program to cross-market with the landscape transformation program. This measure is an enhanced version of the Partnership with Energy Utilities measure.
Enhanced - Residential Water Surveys ^b	This measure would provide comprehensive water surveys for existing single family and multi-family residential customers, targeting those with high water use. The enhancement involves an expansion to multi-family, and the development of a customized report would be provided to the owner. A full survey may be a pre-requisite for receiving rebates. The survey would include inspection of indoor and outdoor water use. This measure is an enhanced version of the Indoor Water Surveys measure above.
Enhanced Water Loss Control Program	This measure includes enhanced water loss efforts to find and repair leaks in the distribution system to reduce real water loss. This is funded by the DOU water distribution team budget. In this enhanced measure, the operating budget would be increased by approximately 2% to support another water loss crew that would be in the field conducting proactive leak detection and repair.
Enhanced - Commercial and Large Landscape Non-Functional Turf Incentive	This measure would target CII & Large Landscape accounts with non-functional turf (NFT) and provide an incentive and resources to assist with landscape retrofits, including water efficient landscape design and plant palette resources, smart irrigation practices guidance, and a rebate for replacing NFT with appropriate landscaping. This measure represents an enhancement to activities described in the Commercial and Large Landscape Non-Functional Turf Outreach measure above.

a. Full measure descriptions are provided in Appendix C and can be found in the DSS Model.

b. Measure is included in the Optimized Program B, as detailed in the following sections.



4.2.2 Conservation Measure Analysis Results

Following the confirmation of the final measures for modeling, MWM conducted detailed analyses to evaluate the potential water savings and cost effectiveness of measures. For each measure, a set of key inputs was developed to support benefit-cost analysis. Measure design inputs were tailored to the specific characteristics of each measure and included inputs such as:

- Affected customer categories (e.g., Single Family, Multi-Family, CII, or other sectors).
- The end uses that would be influenced by implementation (clothes washer, faucets, landscape irrigation, commercial process, etc.).
- Participation targets, which were estimated using historical conservation activity data, where available.
- Estimated measure life (i.e., the number of years the measure would provide benefits) and measure implementation length (i.e., the duration over which the measure would be offered).
- Utility and customer costs were developed on a per-customer-type basis for each measure, along with administrative costs, which were estimated using current City employee rates and informed by City feedback.

Using these inputs, MWM performed calculations to estimate key performance indicators for each measure, including the benefit-cost ratio, lifetime implementation costs, and lifetime water savings both in volumetric terms (millions of gallons saved per day) and monetary terms (dollar value of avoided costs). Estimated avoided costs, which account for the value of water not supplied due to conservation, played a central role in determining the economic viability of each measure. The results of this analysis informed the subsequent step of the planning process, which involved grouping measures into

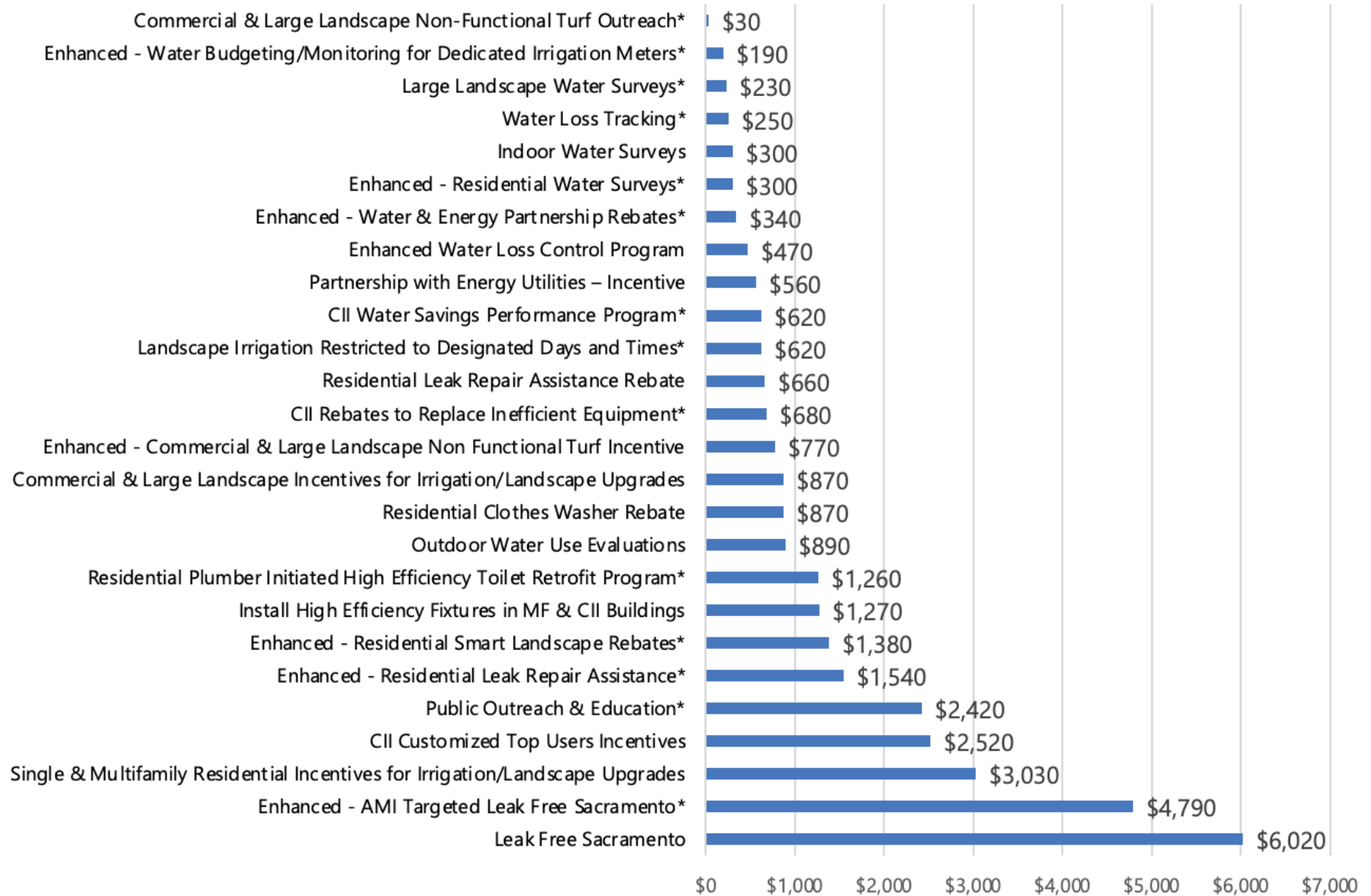
comprehensive conservation programs aligned with the City's goals and a compliance strategy for the *"Making Water Conservation a California Way of Life"* Regulation.

The following figures illustrate the results of the analyses completed for each measure evaluated. Figure 4-9 shows the cost of savings per unit volume in dollars-per-acre-foot. This metric is informative about which measures cost the most to implement. Figure 4-10 presents cumulative projected water savings by the year 2055. While costs of savings per unit volume provides information on which measures are the most cost effective, the cumulative projected savings metric provides information on which measures are the most impactful (are estimated to achieve the most water savings by 2055). It is important to note that this metric is affected by the timeline over which a measure is implemented (measures with long savings lives that are implemented in earlier years will accumulate savings for longer periods).

Figure 4-11 presents a comparison of the cumulative savings and costs of savings per unit volume information presented in Figures 4-9 and 4-10. The most cost-effective measures that also achieve higher water savings are plotted closer to the bottom right quadrant, while measures that are the least impactful and less cost-effective are plotted closer to the upper left quadrant.

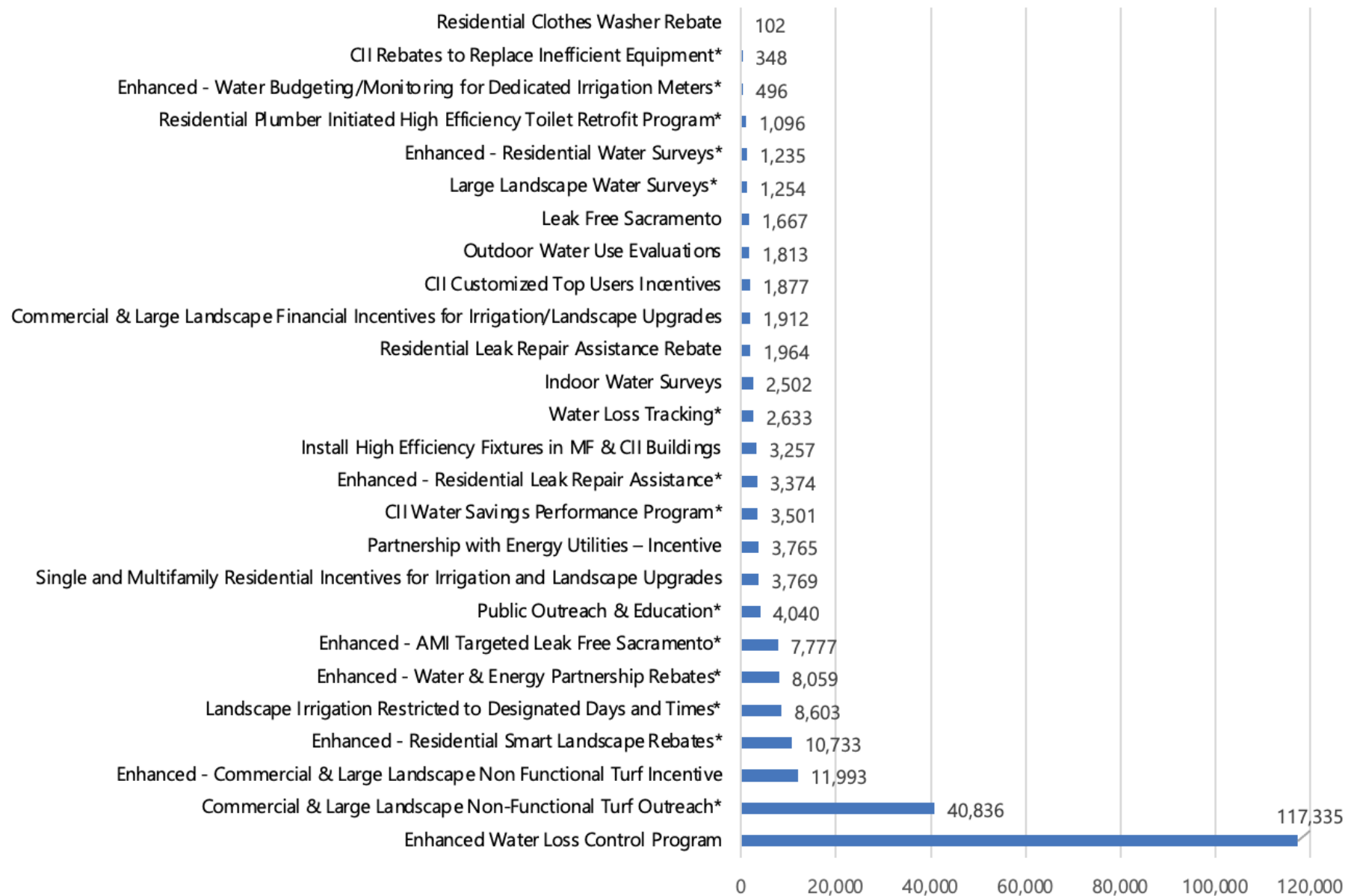
Metrics of cost-effectiveness and water savings are critical in the design of a viable conservation program. However, because a key objective of this Plan is to address new regulatory requirements, performance metrics were used to identify individual measures that could be incorporated into program alternatives in the most cost-effective way while also achieving compliance.

Figure 4-9. Cost of Savings per Unit Volume (\$/AF) Based on Cumulative Water Savings in 2055



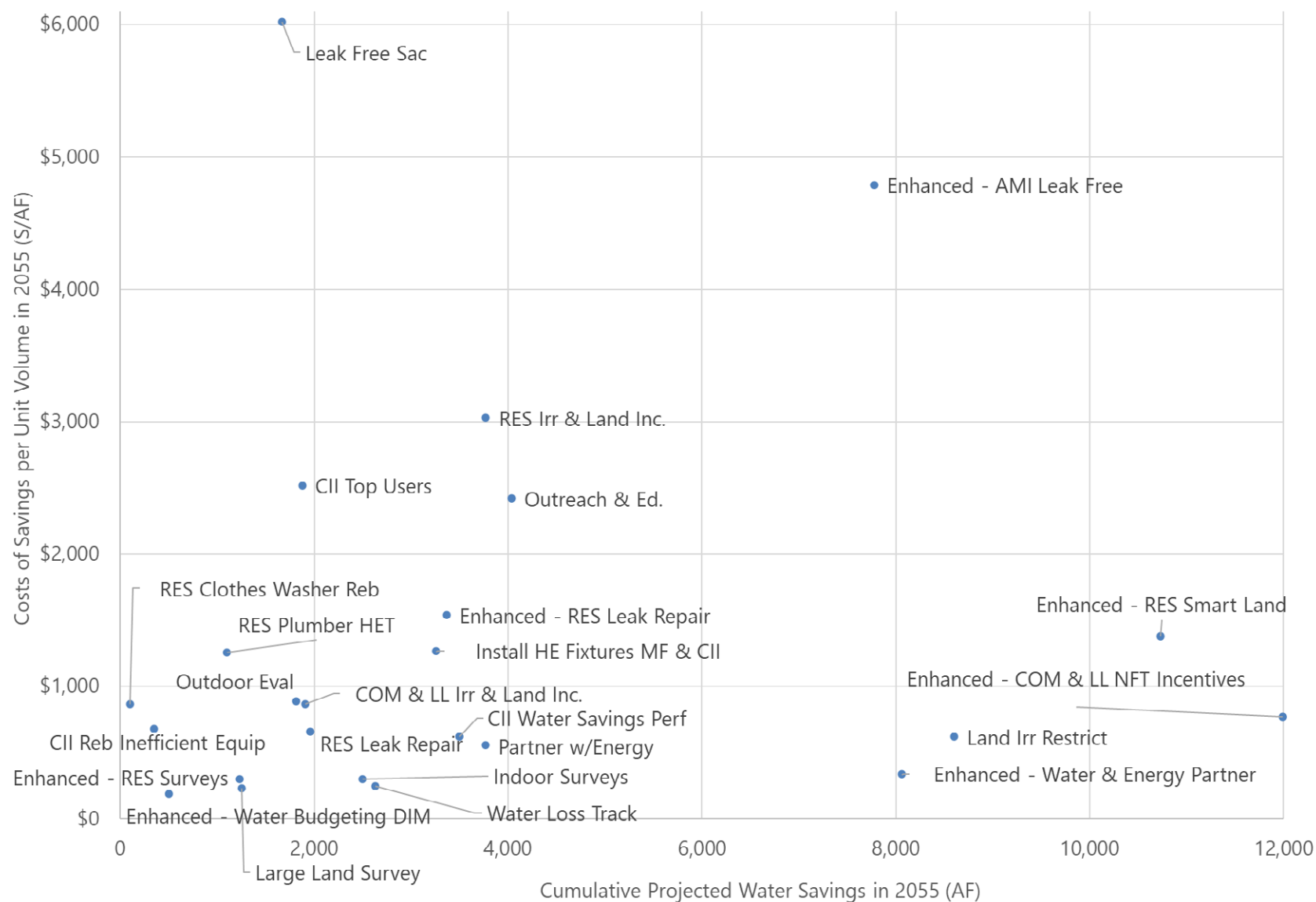
Note: Cost of Savings per Unit Volume (\$/AF) values have been rounded to the nearest ten \$/AF. Measures marked with an asterisk (*) are included in the optimized Program B.

Figure 4-10. Cumulative Projected Water Savings (AF) in 2055



Note: Cumulative projected water savings values have been rounded to the nearest ten AF. Measures marked with an asterisk (*) are included in the optimized Program B.

Figure 4-11. Cumulative Projected Water Savings vs. Cost of Savings per Unit Volume (2055)



Note: Measures with the highest savings, such as *Enhanced Water Loss* with estimated cumulative savings of 117,340 acre-feet (AF) and \$470/AF in 2055, as well as the *Commercial and Large Landscape NFT Outreach* measure with estimated cumulative savings of 40,840 AF and \$30/AF in 2055, are excluded from the figure to better zoom in on the majority of the measures' cost of savings relationships.

4.3 Conservation Program Evaluation

The design of conservation programs and the program evaluation process was focused on producing a suite of program alternatives to offer the City strategic flexibility in meeting both current and anticipated future regulatory requirements under the *“Making Water Conservation a California Way of Life”* Regulation and to refresh the current program to cost-effectively and strategically achieve water efficiency. The programs designed and evaluated will also help the City meet its objectives of strengthening the conservation ethic in the service area and responsibly managing water resources. Program design and evaluation emphasized combining measures with strong BCRs and substantial water savings, then refining them to account for reasonable escalation of projected implementation costs and to ensure alignment with the City’s priorities.

4.3.1 Conservation Program Alternatives

To ensure adaptability in the City’s water conservation strategy, MWM and City staff developed three conservation program alternatives. Each alternative was built from modeled measures and tailored to a different level of anticipated water use, with the goal of providing flexible implementation pathways as future demands arise. The programs were designed to support both near-term compliance and long-term resilience by incorporating the ability to scale conservation efforts as needed. They also draw on insights from historical conservation and water system data, along with input from City staff. In addition, the programs were reviewed by members of the Water Forum, whose comments are included in Appendix D. The programs range from maintaining current practices to adopting more aggressive conservation efforts, as outlined below:

- Program A, referred to as the “Current” Program, includes only those measures that are part of City’s existing conservation activities. This program reflects a continuation of the City’s ongoing efforts and serves as a baseline scenario for comparison.
- Program B, or the “Optimized” Program, includes some of the Current Program measures as well as new and enhanced measures with favorable BCRs and/or high savings potential as identified through the measure analysis. This program represents a modification of the City’s existing conservation activities to optimize resources and expand conservation potential.
- Program C, or the “Expanded” program, builds on Program B by incorporating all enhanced and new measures in lieu of some current measures to achieve maximum savings potential. This program gives the City the option to proactively expand conservation efforts, creating a larger buffer between projected water use and the compliance threshold. This added margin helps mitigate risk should demand exceed current projections or if additional conservation is required to achieve UWUO compliance. Note that Program C is significantly more expensive. Program C has more individual conservation measures than Program B. Also, Program C is running at a different implementation schedule. Even with all these factors, the savings per unit are very close between Program B and Program C. The programs are run independently in the DSS Model, and they have very different budgets. Variance in Program B and C water savings and BCRs are a direct result of the variance in measures included, differing budgets, and differing schedules (measure start year and end year). Many of the measures that are in Program C have a later start date than those in Program B.

Metrics of cost effectiveness and water savings are critical in the design of a viable conservation program. However, because a key objective of this Plan is to address new regulatory requirements, performance metrics were used to identify individual measures that could be incorporated into program alternatives in the most cost-effective way while also achieving compliance.

Table 4-2 presents the measures that comprise the programs discussed above. Table 4-3 presents a summary of the estimated water demand in million gallons per year (MGY) and acre feet per year (AFY) as well as lifetime present value of water savings and utility costs for all three programs analyzed.

Table 4-2. Measure Composition of Programs A, B, and C

Measure	Program		
	A	B	C
Single and Multi-Family Residential Financial Incentives for Irrigation and Landscape Upgrades	✓		
Landscape Irrigation Restricted to Designated Days and Times	✓	✓	✓
Commercial and Large Landscape Financial Incentives for Irrigation and Landscape Upgrades	✓		
Outdoor Water Use Evaluations	✓		
Large Landscape Water Surveys	✓	✓	✓
Enhanced - Water Budgeting/Monitoring for Dedicated Irrigation Meters		✓	✓
Partnership with Energy Utilities – Incentive	✓		
Residential Leak Repair Assistance Rebate	✓		
Leak Free Sacramento	✓		
Water Loss Tracking	✓	✓	✓
Public Outreach & Education	✓	✓	✓
Indoor Water Surveys	✓		
Residential Plumber Initiated High Efficiency Toilet Retrofit Program		✓	✓
Residential Clothes Washer Rebate	✓		✓
CII Customized Top Users Incentives			✓
CII Water Savings Performance Program	✓	✓	✓
CII Rebates to Replace Inefficient Equipment	✓	✓	✓
Install High Efficiency Fixtures in MF & CII Buildings			✓
Enhanced - Residential Smart Landscape Rebates		✓	✓
Commercial and Large Landscape Non-Functional Turf Outreach		✓	
Enhanced - Residential Leak Repair Assistance		✓	✓
Enhanced - AMI Targeted Leak Free Sacramento		✓	✓
Enhanced - Water & Energy Partnership Rebates		✓	✓
Enhanced - Residential Water Surveys		✓	✓
Enhanced Water Loss Control Program			✓
Enhanced - Commercial and Large Landscape Non-Functional Turf Incentive			✓

Table 4-3. Water Savings and Costs of Evaluated Water Conservation Programs

Water Savings	Program A Current Measures (Baseline)		Program B		Program C	
			Optimized Program		Expanded Program	
Year	MGY	AFY	MGY	AFY	MGY	AFY
2025	80	287	148	529	71	253
2030	364	1,300	717	2,562	567	2,026
2035	345	1,232	944	3,371	1,251	4,467
2040	394	1,407	1,040	3,714	1,891	6,752
2045	423	1,509	1,107	3,955	2,563	9,154
Lifetime Present Value of Water Savings (2025-2055)	\$10,019,000		\$24,593,000		\$47,943,000	
Lifetime Present Value of Utility Costs (2025-2055)	\$47,442,000		\$81,430,000		\$153,329,000	
Water Utility Avg. Cost of Water Saved (2025-2055)	\$4,000/MG	\$1,120/AF	\$2,790/MG	\$780/AF	\$2,580/MG	\$720/AF
Avg. Annual Utility Cost (2025-2030)	\$1,662,000		\$2,122,000		\$4,479,000	

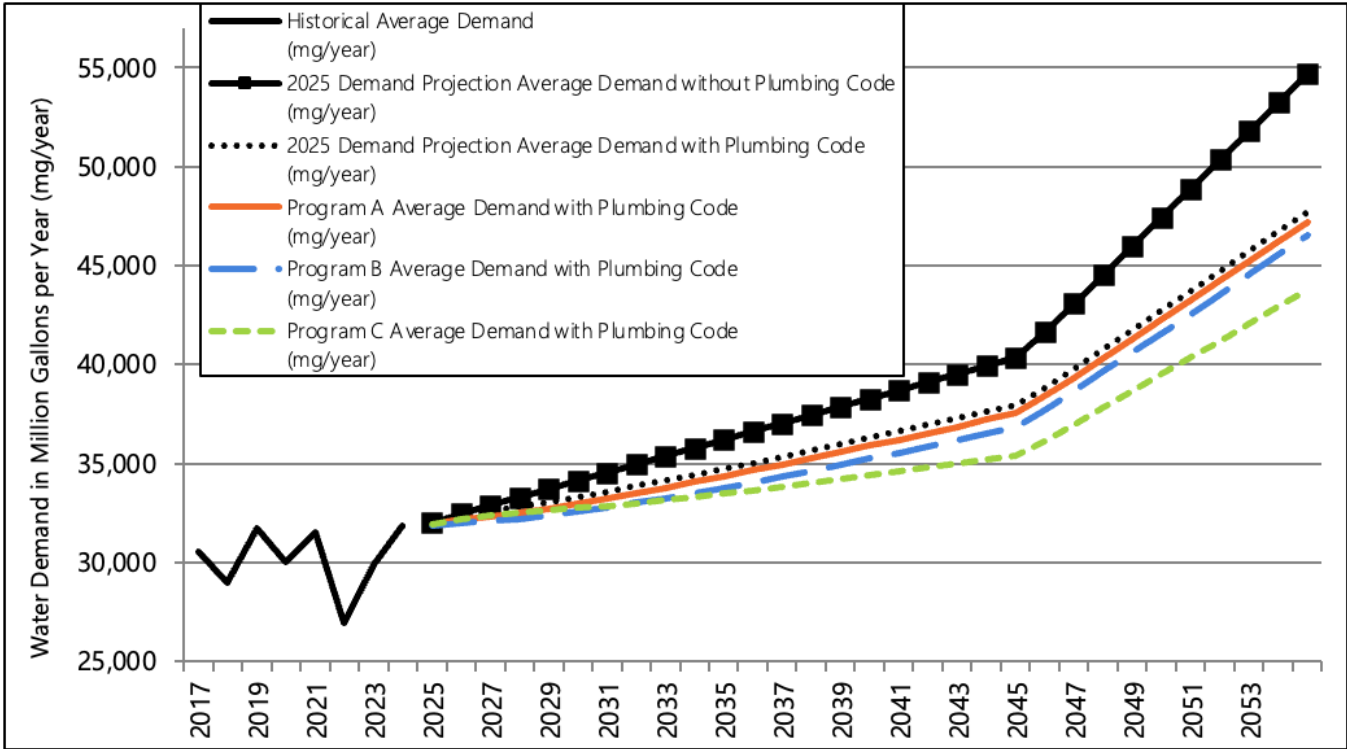
Notes:

1. Water savings are relative to the Plan baseline period, directed by the City to align with the 2023 Water Supply Master Plan (WSMP). Program savings do not include savings from plumbing codes.
2. Present value costs and savings are rounded to the nearest \$1,000. Water utility cost of water saved is rounded to the nearest \$10. 2025-2030 average annual utility cost is rounded to the nearest \$1,000.
3. 2025-2030 average annual utility cost for all four programs includes all direct City costs as well as costs supported by grants for all modeled measures.
4. The average annual utility cost represents what was modeled for this analysis, which differs from the City's current total program cost.
5. Program A's utility cost of water saved is higher than that of the other programs because it contains two measures not included in the other programs (Leak Free Sac and RES Incentives for Irrigation) that have very high cost of water values, \$6,000/AF (acre-feet) and \$3,000/AF, respectively. The other programs have more measures than Program A and most with much lower cost of water values.

The following figures present total estimated water demand and demand as GPCD for the three different programs for comparison. Projected demands with and without the effect of passive conservation (plumbing codes) have also been included to illustrate the effect of passive conservation. The increase in demand in 2045 is due to baseline demands aligning with the 2023 WSMP and 2020 UWMP

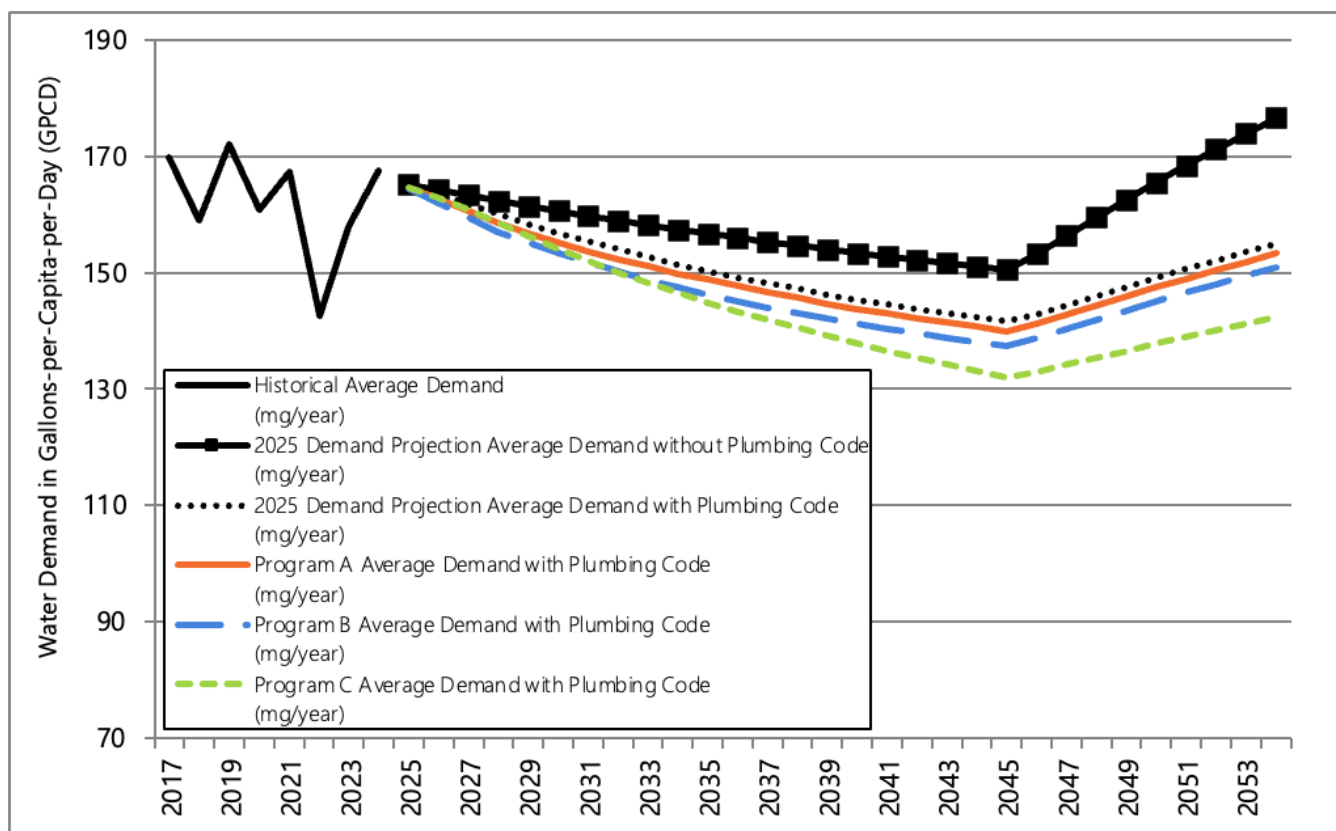
demands per the City's direction for consistency between planning efforts. In these plans, individual customer category demands' rate growth increases in 2045. The 2020 UWMP demands were developed as part of the peaking analysis completed for the 2023 WSMP. Please refer to the 2020 UWMP and 2023 WSMP for details on this growth projection.

Figure 4-12. Projected Water Demand (MG) for Different Program Options



Note: This graph has been scaled to more clearly show the estimated water savings from the program. The year 2017 was selected as a start for the graph as it was the first year that was not declared a water shortage.

Figure 4-13. Projected GPCD Demand for Different Program Options



Note: This graph has been scaled to more clearly show the estimated water savings from the program. The year 2017 was selected as a start for the graph as it was the first year that was not declared a water shortage.

As can be observed from the graphs presented above, Programs B and C are estimated to achieve more water savings than the Current Program (Program A). This is expected as these programs incorporate additional measures and cost more to implement.

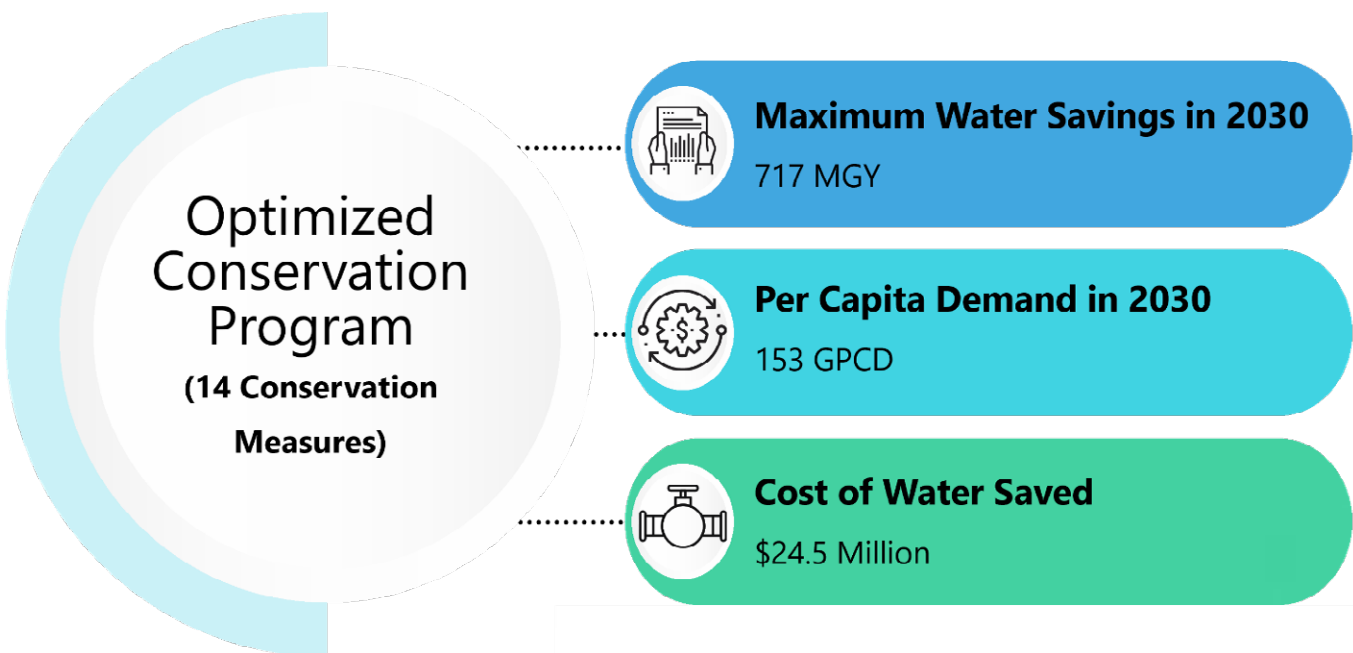
4.3.2 Selected Program Strategy

Based on the analysis presented above, Program B “Optimized Program” was selected as the preferred program to meet the City’s conservation program objectives based on its ability to increase conservation activity in a strategic and optimized cost-effective manner while positioning the City to meet future regulatory requirements.

As displayed in Table 4-3 above, Program B doubles the present value of water savings over the forecast period compared with the current program and decreases the cost per unit of water saved, while Program C quadruples the present value of water savings compared with the current program and further decreases the cost per unit of water saved. While it is estimated that approximately a 28% increase in average annual utility costs compared to the current program will be needed to implement Program B, the increase in overall water savings and cost-efficiency improvement for the increased conservation activity are noteworthy and offer a more proactive response to reducing water demand compared with the current program. Program C is

approximately 47% more expensive than Program B over the 30-year forecast period, making it the most expensive program. As shown in Table 4-2, Program C is different from Program B with several different measures (running at different times). Again, Program C is more expensive than Program B, with a higher program cost of \$4M dollars; Program C’s measures also occur later in time. While Program C has more measures and the highest water savings, its additional activities would incur considerable costs and require substantial additional resources and staff than the significantly less expensive Program B. For this reason, it is recommended to implement Program B but keep Program C in mind for future investment should additional demand mitigation be needed in the future. Overall, implementing Program B would enable the City to maintain water resilience as cost-effectively as possible and address the regulatory requirements. A summary of Program B’s water savings, project demand, and cost of water saved is presented in Figure 4-14.

Figure 4-14. Program B (Optimized) Results Summary



5. AMI Data Analysis

In parallel with the conservation program analysis, MWM conducted an analysis of AMI meter data to:

1. Further evaluate and validate savings estimates for benefit-cost analyses of current measures (where data were available).
2. Understand customer water use patterns to assess opportunities for water savings across the service area more effectively.
3. Identify additional opportunities for targeted program implementation.

This analysis identified data-related challenges and opportunities in AMI data management. Addressing these issues will help the City better leverage available data for future program implementation. The following sections summarize the methodology, key findings, and implications for measures based on the AMI data analyses conducted for this Plan.

5.1 Data Quality

The City provided MWM with hourly consumption data from 2021 to 2023 for all service address meters in the service area. The data was categorized into four customer classes: single-family residential, multi-family residential, commercial, and irrigation.

During the analysis, several items were identified for the City that warrant further investigation:

- **Negative Meter Reads:** Approximately 13% of service addresses had more than one negative read from 2021 to 2023. In December 2023, the last month of data provided, about 4% of service addresses had at least one negative read. Known causes for negative reads include meter malfunction, improper installation/calibration, backflow (including thermal expansion-related backflow), tampering, etc.
- **Missing Data:** Multiple meters had no assigned customer class or lacked data completely.

A professional with expertise in data is recommended to develop a standard operating procedure for data cleaning and efficient data downloads, ensuring accuracy, consistency, and accessibility. This will improve the reliability of future analyses, support more accurate decision-making, and maximize the value of the City's AMI investment.

5.2 Outdoor Watering Schedule Analysis

An outdoor watering schedule analysis was performed to identify single-family residential service addresses that are potentially irrigating more frequently than permitted under current watering restrictions. The term potential irrigation is used for this analysis because some activities (e.g., automatic pool filling) can mimic irrigation patterns. "More frequent" was defined as four or more irrigation days per week, providing a small buffer beyond the two-day maximum permitted by the City's ordinance. Exceptions to the two-day limit include customers using drip irrigation, experiencing two consecutive days above 100°F, or operating a validated irrigation controller.

Hourly AMI data was reviewed for single-family residential accounts during the week of July 17-23, 2023, a period with the highest cumulative reference evapotranspiration (ET_o) recorded at the Fair Oaks California Irrigation Management Information System (CIMIS) station (the closest station to the service area). A week with the highest ET_o is chosen because it is a time when people are most likely to irrigate and potentially over-irrigate. This particular week was also chosen for analysis because a similar ET_o occurred during the same period in 2022, allowing for a year-over-year comparison.

In 2023, approximately 9,154 single-family residential customers (~8% of all single-family residential service addresses) appeared to irrigate four or more days that week. In 2022, when fines increased for the two day per week watering ordinance, 7,741 customers (~7%) met that same threshold. These results suggest that a notable portion of single-family residential customers may be irrigating above the allowed limit, even with restrictions in place. These findings highlight a potential water savings opportunity. Customers who irrigate four or more days per week are strong candidates for the City's water efficiency programs and services. Targeted outreach to this group could help reduce excess outdoor use while supporting compliance with the ordinance or even greater initiatives.

Figures 5-1 and 5-2 illustrate service addresses with potential irrigation four or more days per week. Visualizing the AMI data for individual accounts can help confirm whether observed patterns represent irrigation; additional verification steps may be needed before determining compliance violations.

Figure 5-1. Service Address with Potential Irrigation 4 Days per Week

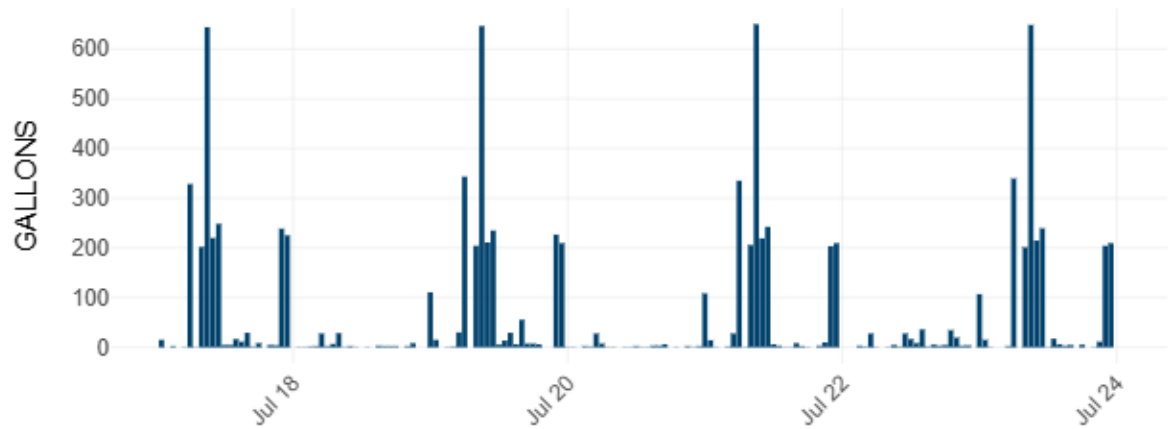
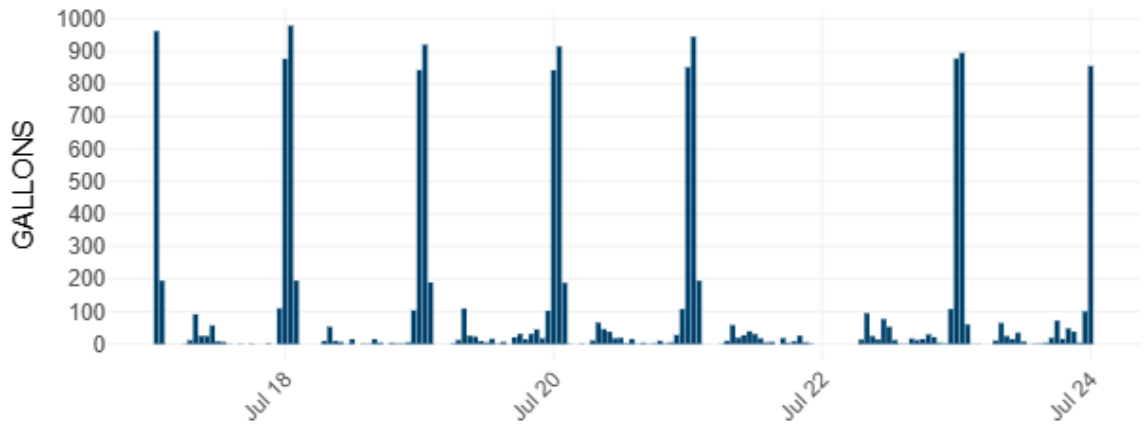


Figure 5-2. Service Address with Potential Irrigation 6 Days per Week



5.3 Peak Production Analysis

The peak production analysis assessed whether the City’s designated watering days of Tuesday, Wednesday, Saturday, and Sunday produce significantly higher hourly peaks than non-watering days.

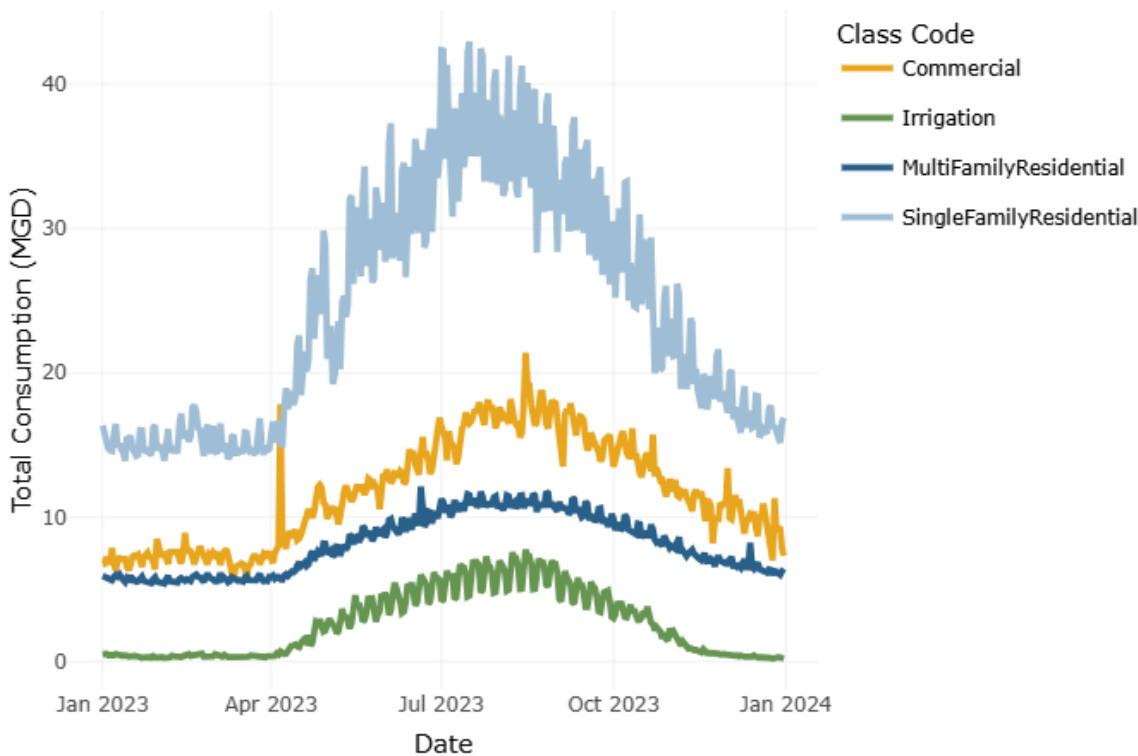
City Watering Schedule Ordinance (March 1–October 31, in place since 2014)

This ordinance allows watering times in the early morning (before 10 a.m.) and later in the evening (after 7 p.m.). The following exceptions are in place:

- Drip irrigation or soaker hoses.
- Hose watering with a spray nozzle.
- Validated smart controllers.
- Potted plants.
- Edible gardens
- New landscaping, up to 30 days after installation.
- Periods with two or more consecutive days above 100°F (degrees Fahrenheit).

This analysis focused on calendar year 2023, a period after the most recent drought and with reduced impacts from the COVID-19 pandemic.

Figure 5-3. Daily Water Consumption by Service Point Class



Findings

After data cleaning to ensure data validity, the analysis found no statistically significant difference in the peak factor between watering and non-watering days. This suggests the following possibilities:

- Customers are not concentrating their irrigation on the allowed watering days (i.e., not causing noticeable peaks on those days).
- Customers are watering more than two days per week, spreading irrigation demands evenly across the week and reducing any contrast.

To better understand irrigation behaviors, customers who watered three or more days per week were identified. While this level of activity does not necessarily indicate a violation of the watering schedules, it may signal potential overwatering. To minimize the impact of the weather

exception, the analysis focused on the week with the highest 7-day cumulative ETo that did not include days over 100°F.

- The peak ETo week occurred from July 24th through July 30th, 2023, with a total ETo of 1.92 inches, and daily high temperatures remained below 100°F.
- There were 18,554 single-family residential customers (~20% of all single-family residential service addresses) that may have been irrigating three or more days per week from July 24th through July 30th, 2023.

The figures below provide examples of AMI data visualizations showing service addresses with irrigation patterns on four or more days within the week.

Figure 5-4. Service Address with 5 Days of Irrigation Using Up to ~750 gallons/hour

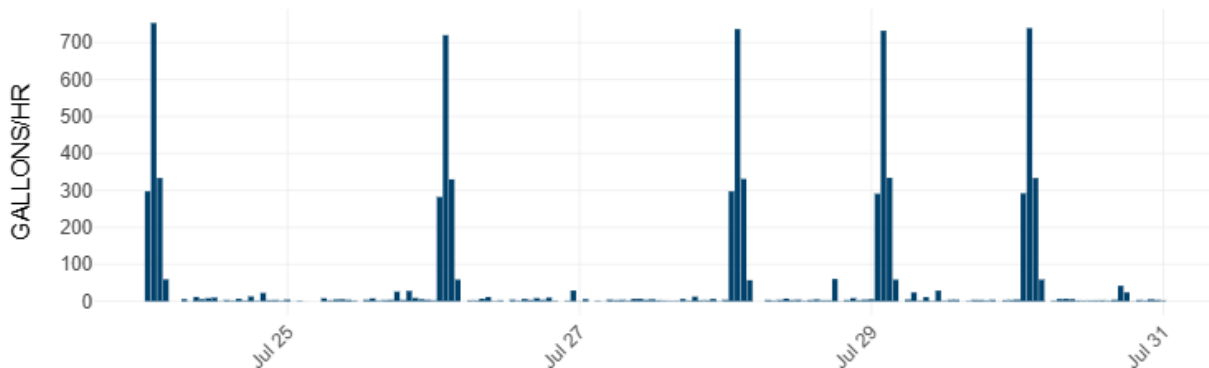


Figure 5-5. Service Address with 6 Days of Irrigation Using Up to ~500 gallons/hour

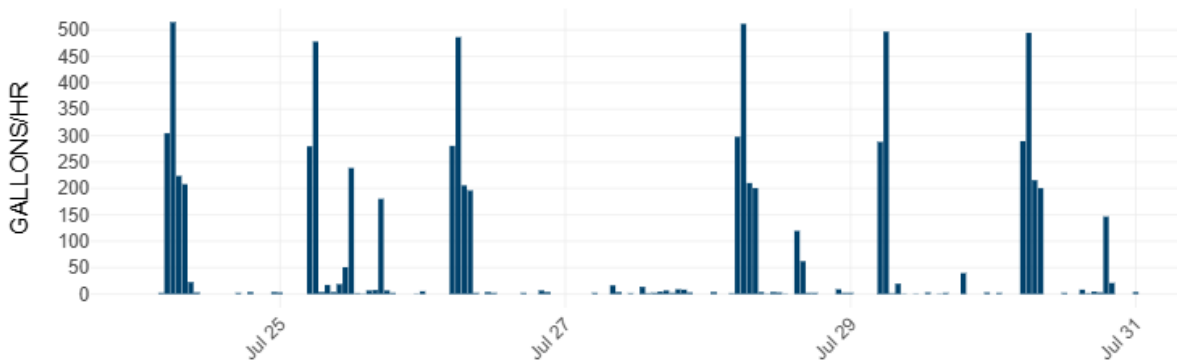
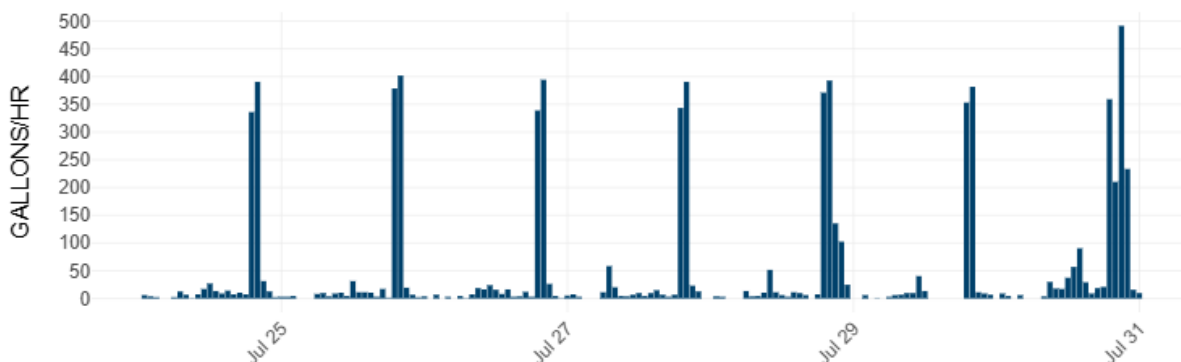


Figure 5-6. Service Address with 7 Days of Irrigation Using Up to ~400 gallons/hour



5.4 Program Water Savings Analysis Using AMI Data

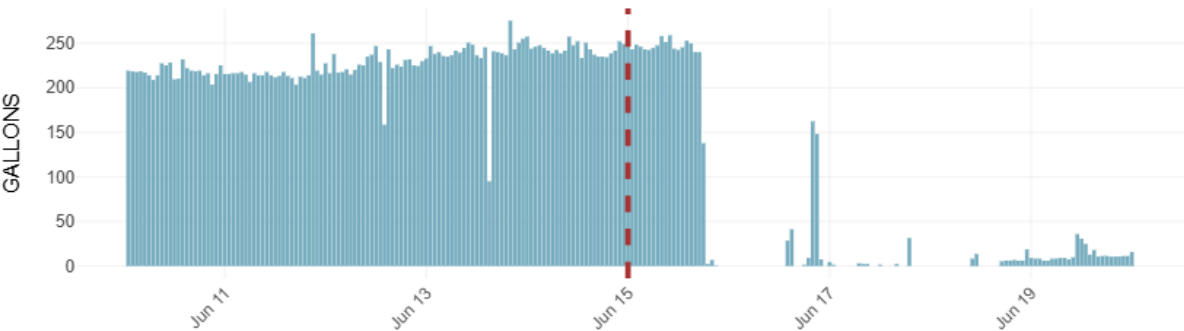
After data cleaning to ensure validity, 201 rebates were analyzed across six rebate types: Irrigation Upgrade, Leak Free Sac, Leak Repair Assistance, Rain Barrel, Smart Controller, and Turf Conversion. For each rebate, the “Packet_Completed_Date” was used as the reference point for analysis. Ideally, a date such as the installation or completion date would provide greater accuracy. One year of data was analyzed before and after the date provided, and the total consumption from the pre- and post-periods was compared to determine the presence and magnitude of water savings. A supplemental test examined whether normalizing consumption against evapotranspiration (ET) data would significantly change results; no substantial differences were found. This analysis was used to inform the DSS model, and additional details can be found in Appendix B.

The analysis of AMI data was found to be a useful analytical tool for reviewing individual programs and activities based on participant water use. Further analysis is planned for 2026 with additional AMI data through 2025. The example below shows one program that was analyzed for this effort in addition to those listed above.

5.4.1 Leak Repair Assistance Rebates

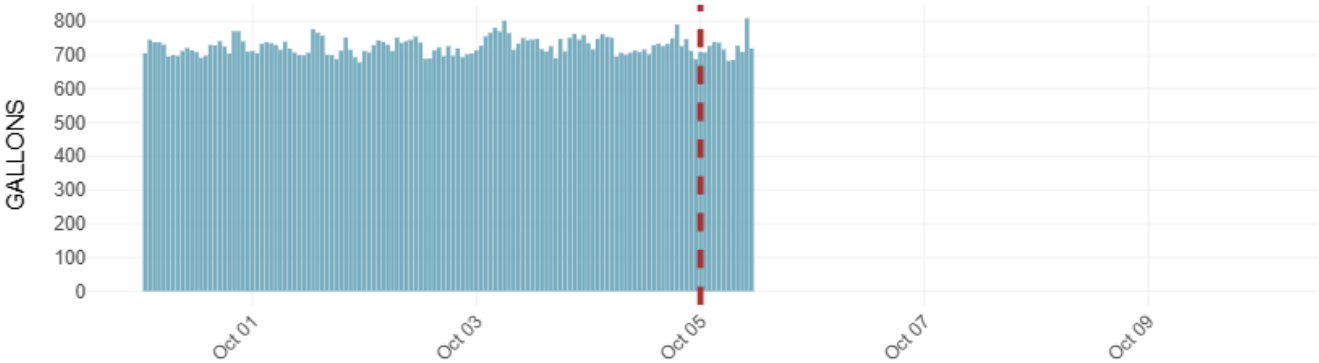
The following figures are examples of meters with leaks that participated in a leak rebate. The graph zooms into the final days of the leak, during which the rebate was provided. The red vertical line represents the packet completion date provided for the rebate.

Figure 5-7. AMI Meter Leak, ~16 months



Note: Visual representation of an AMI meter that experienced a leak that lasted ~16 months, starting on January 28th, 2021, and ending on June 15th, 2022, with a total volume of 2,826,930 gallons.

Figure 5-8. AMI Meter Leak, ~2 months



Note: Visual representation of an AMI meter that experienced a leak that lasted ~2 months, starting on August 6th, 2022, and ending on October 5th, 2022, with a total volume of 923,578 gallons.

6. Program Implementation

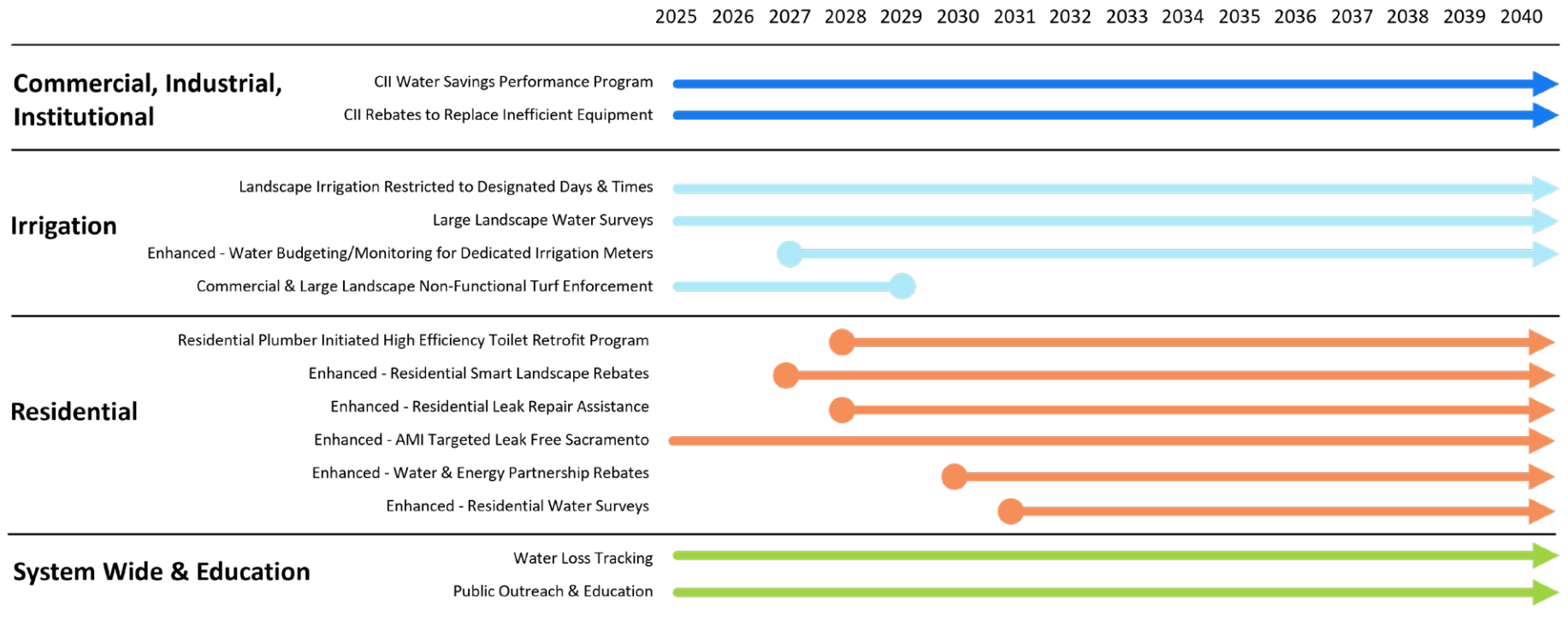
Chapter 3 outlined the requirements for the new “*Making Water Conservation a California Way of Life*” Regulation, while Chapter 4 evaluated individual measures and their grouping into program alternatives, as well as the selected program strategy. This chapter presents the implementation of the selected conservation program strategy to meet the objectives for this Plan.

6.1 Urban Water Use Objective Roadmap

To address the additional activities required for compliance with the Regulation (described in more detail in Chapter 3), a compliance strategy is proposed for Program B. The goal of Program B’s strategy is to maintain or enhance current measures and supplement additional high-savings activities that would help the City achieve compliance with regulatory requirements. As such, Program B’s measures were structured to be in line with these regulatory timelines. Figure 6-1 presents the modeled implementation schedule for each measure over the planning horizon. Measures recommended as a high priority have an earlier starting year. Descriptions of each measure can be found in Chapter 4; each measure’s comments (see measure screenshots in Appendix C) contain further detail on how the measure would be structured.



Figure 6-1. Implementation Schedule for Recommended Program B



6.2 Recommended Staffing

The selected program, Program B, requires a Water Conservation Supervisor and total of 12 full-time equivalent (FTE) staff to implement for FY 2027-2028. The existing City program has 11 FTE staff and has a vacant Water Conservation Supervisor role. With the incoming Regulation and the staff needs, the program and reporting process would benefit from having a Water Conservation Supervisor to manage and streamline the program to ensure future success. MWM recommends also adding 1 more FTE as a Data Analyst. This new Data Analyst would use the daily AMI water meter data to do regular program analysis for water savings similar to what was shown and discussed in Chapter 5.

The City can only seek budget increases on a bi-annual budget cycle. The next opportunity to consider staffing is in FY 2027. The City of Sacramento's water rates are typically adjusted in a multi-year cycle, and adjustments on or shortly after FY 27 are anticipated. The recommended increased staff should be included as part of the new Water Conservation budget request, especially if the City is not on track to meet future the UWUO requirements.

It is recommended that between now and when the budget request is due, that the program activity and UWUO be tracked carefully. MWM is planning to support this effort of tracking and monitoring as the program recommendations are implemented. Additional suggestions and tips are provided in Section 6.3.

6.3 Monitoring Suggestions for Tracking Progress

Regularly tracking conservation program progress is key to maintaining a robust and effective program and to keeping the City on target to meet its water conservation goals. Additionally, monitoring changes in water use and demand will help the City right-size any future measures

and programs to meet both customer and system needs. A summary is provided in Figure 6-2. The following presents industry-based suggestions for tracking ongoing progress:

- Develop an annual work plan for each planned year as soon as the budget is adopted (or in connection with the budget planning process) and note current participation rates and per capita water demand, as well as the targets for the upcoming year.
- The conservation measure worksheets in the DSS Model can be used to track actual activities against those planned during model development. Updating this information is recommended as part of the annual work plan and budget process and should occur at least once every 3-5 years.
- Track water use each month by customer class and overall per capita water use. Use the MWM Data Collection Workbook or an online tool (e.g., WaterView™ by Eagle Aerial) to enter data.
- Consider soliciting and tracking community input and feedback via online or phone surveys or at outreach and education events.
- Identify specific metrics to track within each measure, using an Excel spreadsheet to keep records monthly, quarterly, or annually. The City currently tracks the following metrics and should continue to prioritize program monitoring and refine the metrics used:
 - Number of rebates provided or fixtures installed.
 - Number and size of leaks repaired.
 - Square feet of landscape converted.
 - Workshop attendance.
 - Number of water waste violations.
 - Water savings before and after fixture replacement or leak repair.
 - Cost of devices provided/installed.
 - Staff time spent per measure per customer and/or site.

Figure 6-2. Examples of Program Tracking and Monitoring Metrics



6.4 Future Recommendations and Considerations

Considering the City's ongoing commitment to improving water demand resilience and to be in good standing for future UWUO compliance, the following additional points should be considered. Many of the programs described in Section 4.2 show that the activity level has reached saturation for a few of the long-standing programs.

Existing City conservation program recommended revisions:

1. **Sunset Existing Toilet Rebate Program** – The program started in 2009, and activity has been low for the past two years following the end of the drought in 2022 when toilet rebates were temporarily doubled for more efficient models. MWM recommends removing this program and instead implementing the toilet retrofit program in the newly designed Program B to capture the remaining water savings from toilets. The City is aware of potential free-ridership for this, which has been included in the savings analysis considerations, but believes it can be minimized by requiring that Ultra High Efficiency Toilets (HETs) of (1 gallon per flush or less) be installed in most instances.
2. **Sunset Existing Clothes Washer Rebate Program** – The program started in 2009, and activity has been low for the past two years following the end of the drought in 2022. Even when the City doubled the rebate in 2021, activity did not increase. The City recognizes that significant free-ridership already exists for this program, and it is expected to increase once the 2028 federal regulations on clothes washers take effect, which will restrict the sale of high-water-use clothes washers nationally. A 25% free-ridership factor was included in the savings analysis considerations for this reason.
3. **Examine the effectiveness of the Smart Water Controller Exception to the Two Day a Week Watering Ordinance** – The original ordinance was modified more than eight years ago to encourage the installation of this newer technology. Now that smart controllers are industry standard and have features including programming in “black out days” or “allowable watering days” to adhere to the original ordinance, this exception might be further analyzed with an adjustment to the Outdoor Watering Code considered.
4. **Review and Adjust Rebate Values** – Annually review and regularly adjust individual rebate values (as appropriate) to create a flexible program that can adapt to technological changes, variable weather patterns, customer behavior, and changes in regulation compliance status. Factors to consider include:
 - Recent program activity.
 - Price of the product (increase or decrease in cost).
 - The stage of market saturation for the product (i.e., if it is a new or established product).
 - The dollar value needed to motivate customers to make a change.
 - Whether water shortage conditions are present and the City needs to increase conservation efforts.

5. **Annually Review Water Demands and Projections** – This Plan was developed using information provided by the City. As service area dynamics shift and new planning efforts are completed, annual water demand should be reviewed to assess projected versus realized demands for the year and how changes can affect future demand and compliance with the new Regulation.

Recommendations for near-term implementation of Program B and future consideration of Program C:

- The City has to comply with the new statewide water efficiency Regulation that took effect on January 1, 2024. The new Program B aims to keep the City in compliance with the UWUO based on the available information and the 2024 reporting information shared in Section 6.1 and Appendix A.
- As soon as possible, the City should hire a Water Conservation Supervisor as well as a Data Analyst to handle the increased program needs, support regulation compliance, analyze data from the new Program B measures, and efficiently analyze the AMI water data similar to Section 5. Tracking water use utilizing AMI data will be significant for identifying participation and effectiveness of the City's conservation programs. The City currently has 1 FTE Water Conservation staff per 13,000 connections, which is relatively low ratio, compared to proactive water agencies throughout the State of California and in Southern Nevada.
- The new statewide Urban Water Use Objective Regulation still has many unknowns, including some data that has not yet been released to the City. The Regulation will continue to be defined, and the City will continue to grow and change over the coming years. If the City's water use increases for any reason, then the City should seek additional staffing and apply resources to implement Program C. It is planned to run program B starting in FY 2028. If the City's per capita water use increases more than 5-10% for more than one or two years, the City should seek additional staffing and apply resources to implement Program C.
- It is important to recognize that implementing water efficiency and conservation measures will also advance other City goals and initiatives. These measures should be reviewed annually to identify opportunities for alignment and resource sharing. For example, the Climate Action Adaptation Plan includes reduction targets that closely align with the water conservation goals outlined in this Plan.

6.4.1 Water Loss Enhancement

The Water Loss Performance Standard is already set for the City, and enforcement takes effect on January 1, 2028. The City of Sacramento's Real Water Loss Standard is 41 gallons per connection per day. The City is currently meeting this standard. However, water loss is a dynamic value that changes on an annual basis, and the City's infrastructure is aging. It is recommended that the water loss be tracked carefully. If it appears to be rising, more resources should be allocated to keep water loss at or below the City's standard to stay in compliance. As part of this monitoring, the City should review the upcoming 2026 Water System Audit Software Workbook and assess if the gallons per connection aligns with the City's goals and recent trends. In addition, the City is required to submit a registry of breaks, repairs, and estimated water losses to the SWRCB every three years. The first registry contains three years of data between calendar years 2025 and 2027 and is due by January 1, 2029.

To help the City with its funding and planning efforts, two different measures were developed and analyzed as part of this Plan. The first measure is simply to complete the Water System Audit Software and staff level planning to track trends, which is done on an annual basis. The "enhanced" measure allocates more resources and more proactively addresses leakage levels while investing further in repairs, such that water loss levels stay in the appropriate range for compliance. A second leak detection crew was temporarily added during the 2014-17 drought that found mostly customer side leaks. However, as the overall City water system continues to age there may be an increase in water loss and a second crew may be needed to meet the Real Water Loss Standard of 41 gallons per connection per day.

6.4.2 Funding Sources and Partnerships

The City has a long-standing relationship with regional partners including RWA, SMUD (the local energy provider), and other local partners. These partnerships have helped the City successfully implement its conservation program since the 2013 Water Conservation Plan was developed. It is recommended to continue partnering with these and other entities, as such collaborations support funding, outreach, and program implementation. Recent experience shows that grant applications are more successful when pursued on a regional basis rather than individually.



7. Conclusion

This Water Efficiency and Conservation Plan was developed to support the City of Sacramento in meeting both near- and long-term regulatory compliance requirements while working to build on its water conservation program, jointly achieved with RWA. This Plan selects the most cost-effective path forward and provides a data-driven roadmap that builds on the City's existing efficiency and conservation efforts while addressing new standards and requirements established under SB 606, AB 1668, and the *"Making Water Conservation a California Way of Life"* Regulation.

The City has a robust conservation program in place which, combined with its operations efforts, has positioned the City to adapt strategically to meet the Regulation requirements and continue to build an ethic of water conservation in its service area.

This Plan seeks to address all the identified gaps for compliance with the Regulation and gives the City flexibility in increasing conservation activity if projections materialize higher than anticipated. Through the integration of historical conservation data, service area demographics, and demand data, collaboration with City staff, and the use of the DSS Model, the Plan evaluated 26 individual measures and designed three program alternatives tailored to the City's unique service area characteristics and anticipated development. Program B ("Optimized") was selected as the preferred program for implementation. It reflects a moderate yet strategic expansion of conservation efforts, including the ability to mitigate future uncertainties related to the Commercial Outdoor Water Use Standard, future water costs, and potential climate impacts.

To implement Program B effectively and ensure ongoing compliance with changing UWUO standards, this Plan recommends annual tracking of participation, water savings, and program costs, along with regular updates to the DSS Model. As new data becomes available, the UWUO will shift annually, underscoring the need for adaptive management. Program B provides a structured yet flexible platform for the City to meet its water use objectives, expand its conservation ethic, and maintain long-term water supply resiliency in an increasingly complex regulatory and environmental landscape.



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Appendix A

UWUO Assessment & Status Summary

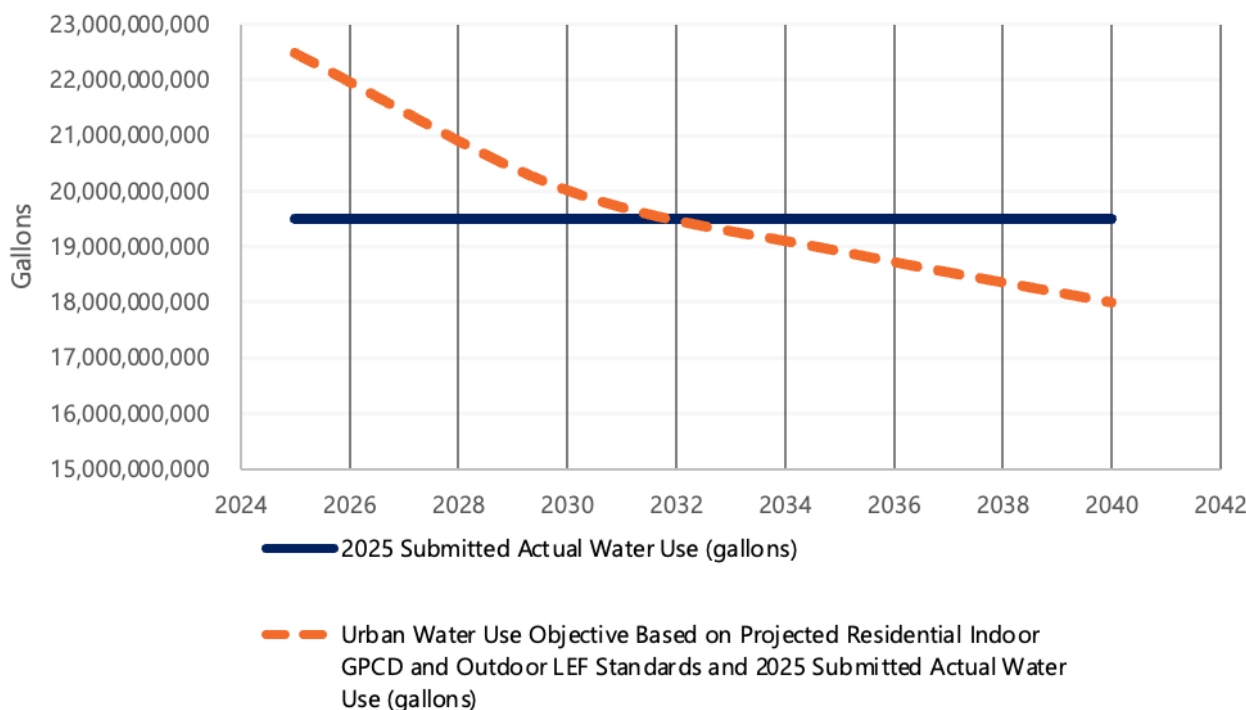
A.1 City of Sacramento UWUO Assessment

The City's reported water use for 2024 (shown below in the UWUO report) was compared to UWUO standards for 2025, 2030, 2035, and 2040 to assess whether the City is on course to meet the Regulation water use standards and to inform measure and program design decisions. Note that *only the Residential Indoor and Residential Outdoor UWUO Standards were considered, as the Commercial Outdoor Water Use Standard is still unknown pending Land Area Measurement data*. The results of this analysis are presented in Figure A-0-1.

Based on estimated projected residential indoor and outdoor requirements compared to current water use, the City will need to achieve significant water savings to meet its UWUOs through 2040. It is important to note that the City's Commercial Outdoor Water Use Standard will change in 2028, but the impact on the UWUO cannot be estimated until the pending data is available.

It is recommended that the City continue to monitor water use closely and implement more aggressive water conservation efforts—such as increasing measure participation—if actual use exceeds projections or to proactively widen the gap between demand and the UWUO (see Section 3 for a detailed discussion of the UWUO and its components). The program recommended in this Plan (Program B) positions the City toward compliance; however, outcomes will be influenced by future climate conditions, development patterns, and actual implementation of conservation activities. If additional water savings are required, the City may consider transitioning to Program C.

City of Sacramento Submitted Data versus Project Standards



A.2 CII BMP Requirements

The following tables present the compliance status and notes on the City's current and planned activities to meet each of the CII BMP category requirements. Only the CII regulations and actions are detailed below, as they are not included in the quantitative UWUO like the other use category. Tables one through five below present all the options available to meet CII BMP requirements per the Regulation text. The tables indicate the activities the City is planning to pursue for compliance, only two activities per category are required for compliance.

Table A-1. Compliance Status of CII BMP Categories

CII BMP Categories	Status (Meet Requirements with Current/Planned Activities)
1 - Outreach, Technical Assistance, and Education	Current
2 - Incentive	Planned
3 - Landscape	Current
4 - Collaboration and Coordination	Planned
5 - Operational	Current

1 – Outreach, Technical Assistance, and Education

List of Activities that Meet Requirements	City's Active Activities that Meet Requirements	City's Planned Activities that Meet Requirements
Direct contact via site visits or phone calls	Large Landscape Water Surveys	
Informative or educational bill inserts		
Conducting workshops or developing training videos		
Webpage portals to access information, tools, and rebates		
Cost-effectiveness analysis tools		
Commercials and advertisements	Public Outreach and Education	
Community-based social marketing		
Other CII-best management practices derived from additional innovation and technology advancement that can be taken by suppliers, subject to Board approval		Commercial and Large Landscape Non-Functional Turf Outreach

2 – Incentive

List of Activities that Meet Requirements	City's Active Activities that Meet Requirements	City's Planned Activities that Meet Requirements
Rebates and cost-sharing for replacing inefficient fixtures, equipment, irrigation systems or landscapes with water efficient ones	CII Water Savings Performance Program, CII Rebates to Replace Inefficient Equipment	
Certification or branding programs that recognize customers as water efficient		
Incentives for technologies that enable customers to identify, measure, and analyze indoor and outdoor water use		
Other CII-best management practices derived from additional innovation and technology advancement that can be taken by suppliers, subject to Board approval		

3 – Landscape

List of Activities that Meet Requirements	City's Active Activities that Meet Requirements	City's Planned Activities that Meet Requirements
Landscape and irrigation management practices to promote improved water use efficiency	Landscape Irrigation Restricted to Designated Days and Times, Commercial and Large Landscape Financial Incentives for Irrigation and Landscape	
Irrigation system inspections, audits, or surveys	Large Landscape Water Surveys	
Training or guidance on irrigation scheduling and maintenance		
New development landscape inspection, workshops, and training		
Programs to remove turf and replace it with climate-ready vegetation	Commercial and Large Landscape Financial Incentives for Irrigation and Landscape Upgrades	
Programs to decrease urban heat and reduce turf water use by planting trees		
Programs to install green infrastructure such as swales or rain gardens that offset irrigation needs		
Other CII-best management practices derived from additional innovation and technology advancement that can be used by suppliers, subject to State Board approval		Enhanced – Water Budgeting/Monitoring for Dedicated Irrigation Meters

4 – Collaboration and Coordination

List of Activities that Meet Requirements	City's Active Activities that Meet Requirements	City's Planned Activities that Meet Requirements
Infrastructure changes (for example, smart meter replacement programs)	AMI deployment and maintenance	
Billing or data collection procedures (for example, data tracking, analysis, and reporting improvements)	Enhanced – Water Budgeting/Monitoring for Dedicated Irrigation Meters	
Other operational best management practices to facilitate CII best management practices program implementation and evaluation	AMI data analysis to identify potential targets for participation	
Other CII Best Management Practices derived from additional innovation and technology advancements that can be taken by suppliers, subject to SWRCB approval		

5 – Operational

List of Activities that Meet Requirements	City's Active Activities that Meet Requirements	City's Planned Activities that Meet Requirements
Infrastructure changes (for example, smart meter replacement programs)	AMI deployment and maintenance	
Billing or data collection procedures (for example, data tracking, analysis, and reporting improvements)	Enhanced – Water Budgeting/Monitoring for Dedicated Irrigation Meters	
Other operational best management practices to facilitate CII best management practices program implementation and evaluation	AMI data analysis to identify potential targets for participation	
Other CII Best Management Practices derived from additional innovation and technology advancements that can be taken by suppliers, subject to SWRCB approval		

A.3 2024 UWUO Compliance Report

Figure A-1. 2024 UWUO Compliance Report Submission for the City of Sacramento

Actual Use Compared to Urban Water Use Objective

In Gallons/Year

Water Use Component	Actual Water Use (Gallons)	Urban Water Use Objective (Gallons)
Total Residential Water Use, Indoor + Outdoor	16,603,200,000.00	18,864,698,997.91
Outdoor Irrigation of CII landscapes associated with DIMs	1,440,800,000.00	1,440,800,000.00
System Water Loss	1,446,314,610.40	2,175,848,401.13
Variances, Provisions, and 20% INI buffer, if applicable	N/A	0.00
Bonus Incentive	N/A	0.00
Sum of Water Use Components (Specific to Objective)	19,490,314,610.40	22,481,347,399.04
Excluded Demands	6,730,600,000.00	6,730,600,000.00
Sum of Water Use Components (Objective + Excluded)	26,220,914,610.40	29,211,947,399.04
SB X7-7 Target Volume Plus Previously Excluded Process and Recycled Water	N/A	42,670,558,350.00
"Capped" Objective	N/A	22,481,347,399.04
Regional Alliance Met Regional Target? (If Applicable)	N/A	Not Applicable
Final Comparison of Actual Water Use to Objective	19,490,314,610.40	22,481,347,399.04

In Acre-Feet/Year

Water Use Component	Actual Water Use (Acre-Feet)	Urban Water Use Objective (Acre-Feet)
Total Residential Water Use, Indoor + Outdoor	50,953.28	57,893.56
Outdoor Irrigation of CII landscapes associated with DIMs	4,421.65	4,421.65
System Water Loss	4,438.57	6,677.42
Variances, Provisions, and 20% INI buffer, if applicable	N/A	0.00
Bonus Incentive	N/A	0.00
Sum of Water Use Components (Specific to Objective)	59,813.50	68,992.63
Excluded Demands	20,655.45	20,655.45
Sum of Water Use Components (Objective + Excluded)	80,469.03	89,648.17
SB X7-7 Target Volume Plus Previously Excluded Process and Recycled Water	N/A	130,951.14
"Capped" Objective	N/A	68,992.72
Regional Alliance Met Regional Target?	N/A	Not Applicable
Final Comparison of Actual Water Use to Objective	59,813.58	68,992.72

List of Supplier Public Water Systems

PWSID	Water System Name	County	Residential Population	Number of months with non-zero potable deliveries in Clearinghouse	Annual Potable Municipal Deliveries (Acre-Feet)	Annual Nonpotable Municipal Deliveries (Acre-Feet)	Reported Real Water Loss (per Open Data table) (Acre-Feet)	Water System Included in Objective Calculations?
CA3410020	CITY OF SACRAMENTO MAIN	SACRAMENTO	518,161	12	76,030.46	0.00	4,438.57	Yes

Note: This summary sheet was taken from the revised 2023-2024 Fiscal Year UWUO Submittal file uploaded to the Water Use Efficiency Data Portal on the California Department of Water Resources webpage.

Appendix B

DSS Model Description and Assumptions



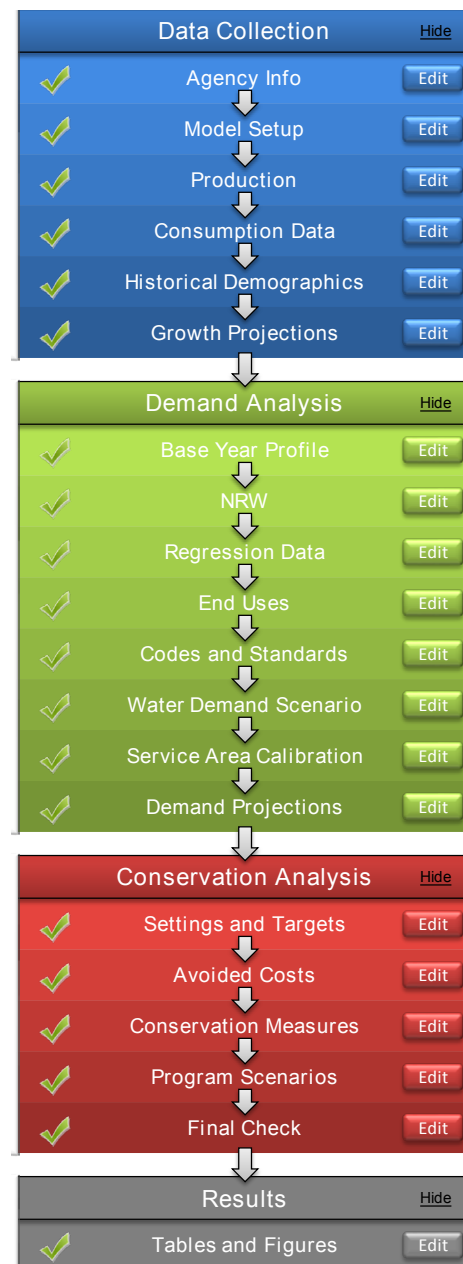
DSS Model Overview: The Demand Side Management Least Cost Planning Decision Support System (DSS Model) as shown in Figure B-1 is used to prepare long-range, detailed demand projections. The purpose of the extra detail is to enable a more accurate assessment of the impact of water efficiency programs on demand and to provide a rigorous and defensible modeling approach necessary for projects subject to regulatory or environmental review.

Originally developed in 1999 and continuously updated, the DSS Model is an “end-use” model that breaks down total water production (water demand in the service area) to specific water end uses, such as plumbing fixtures and appliance uses. The model uses a bottom-up approach that allows for multiple criteria to be considered when estimating future demands, such as the effects of natural fixture replacement, plumbing codes, and conservation efforts. The DSS Model may also use a top-down approach with a utility-prepared water demand forecast.

Demand Forecast Development and Model Calibration: To forecast urban water demands using the DSS Model, customer demand data are obtained from the water agency being modeled. Demand data are reconciled with available demographic data to characterize water usage for each customer category in terms of number of users per account and per capita water use. Data is further analyzed to approximate the split of indoor and outdoor water usage in each customer category. The indoor/outdoor water usage is further divided into typical end uses for each customer category. Published data on average per capita indoor water use and average per capita end use is combined with the number of water users to calibrate the volume of water allocated to specific end uses in each customer category. In other words, the DSS Model checks that social norms from end studies on water use behavior (e.g., flushes per person per day) are not exceeded or drop below reasonable use limits.

Passive Water Savings Calculations: The DSS Model is used to forecast service area water fixture use. Specific end-use type, average water use, and lifetime are compiled for each fixture. Additionally, state and national plumbing codes, and appliance standards are modeled by customer category. These fixtures and plumbing codes can be added to, edited, or deleted by the user. This process yields two demand forecasts, one with plumbing codes and one without plumbing codes.

Figure B-1. DSS Model Main Page



Active Conservation Measure Analysis Using Benefit-Cost Analysis:

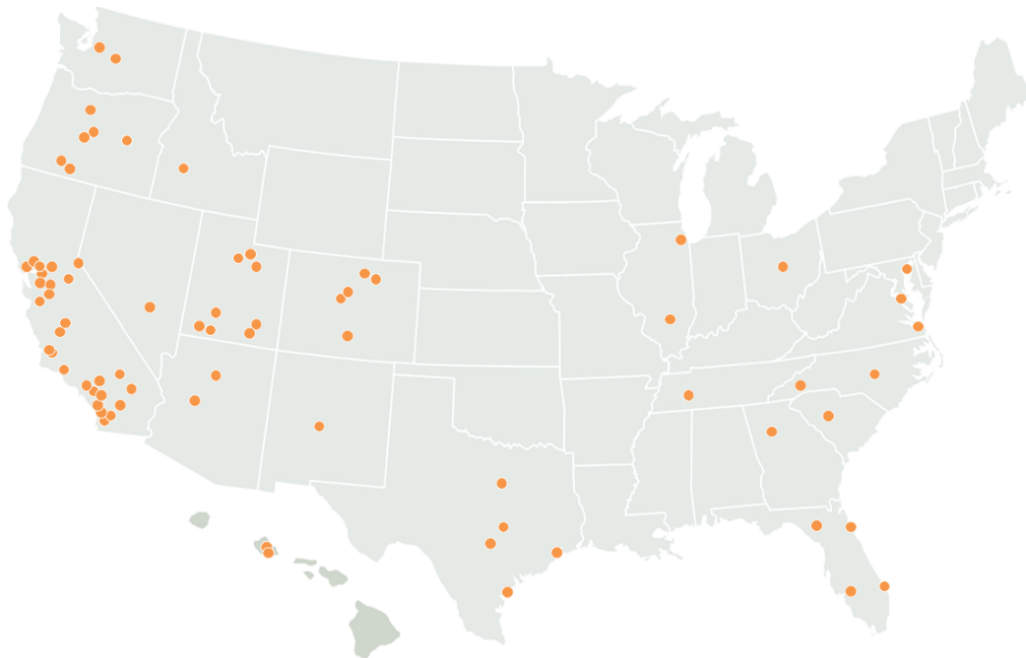
The DSS Model evaluates active measures using benefit-cost analysis with the present value of the cost of water saved (\$/Million Gallons or \$/Acre-Feet). Benefits are based on savings in water and wastewater facility operations and maintenance (O&M) and any deferred capital expenditures. The figures on the previous page illustrate the processes for forecasting conservation water savings, including the impacts of fixture replacement due to existing plumbing codes and standards. A Benefit Cost Ratio at or above 1 indicates a measure or program is cost effective, as indicated in the figure below.

Figure B-2. Benefit-Cost Analysis Summary Example

Util Cost Five Year Start Year		Water Savings Year		Units						
		2025		2040		AF				
	Measure	Present Value of Water Utility Benefits	Present Value of Community Benefits	Present Value of Water Utility Costs	Present Value of Community Costs	Water Utility Benefit to Cost Ratio	Community Benefit to Cost Ratio	Five Years of Water Utility Costs 2025-2030	Water Savings in 2040 (afy)	Cost of Savings per Unit Volume (\$/af)
1	Single and Multifamily Residential Financial Incentives for Irrigation and Landscape Upgrades	\$1,022,377	\$1,022,377	\$11,418,312	\$99,592,186	0.09	0.01	\$1,827,604	134.754240	\$3,030
2	Landscape Irrigation Restricted to Designated Days and Times	\$2,336,169	\$2,336,169	\$5,367,144	\$5,883,694	0.44	0.40	\$871,427	309.060204	\$624
3	Commercial and Large Landscape Financial Incentives for Irrigation and Landscape Upgrades	\$520,311	\$520,311	\$1,657,086	\$2,410,307	0.31	0.22	\$288,086	69.303054	\$867
4	Outdoor Water Use Evaluations	\$497,440	\$497,440	\$1,605,025	\$2,039,285	0.31	0.24	\$259,202	59.501940	\$885

Model Use and Validation: The DSS Model has been used for over 20 years for practical applications of conservation planning in over 300 service areas representing 60 million people, including extensive efforts nationally and internationally in Australia, New Zealand, and Canada.

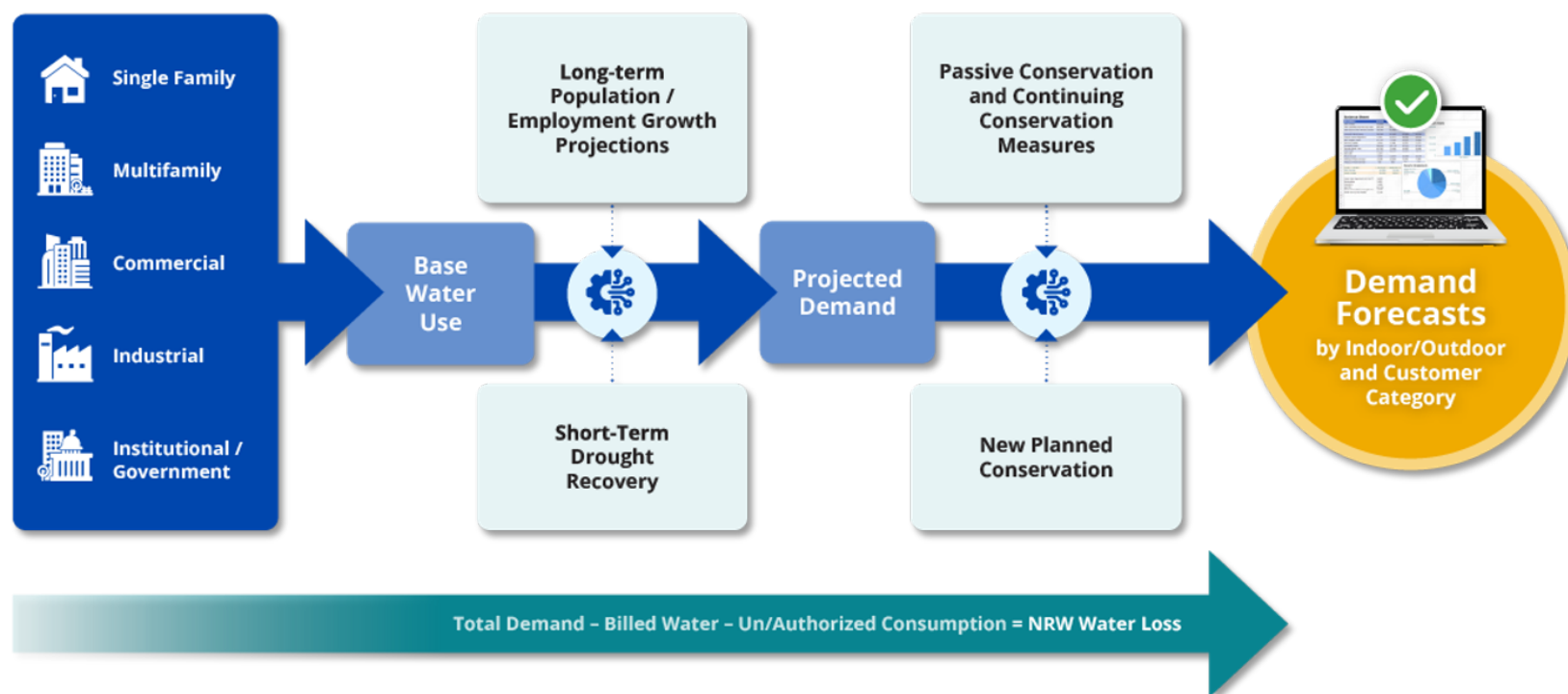
Figure B-3. DSS Model Analysis Locations in the U.S.



The DSS Model can use one of the following: 1) a statistical approach to forecast demands (e.g., an econometric model); 2) a forecasted increase in population and employment; 3) predicted future demands; or 4) a demand projection entered into the model from an outside source.

The following figure presents the flow of information in the DSS Model Analysis.

Figure B-4. DSS Model Analysis Flow



Appendix C

Conservation Measure Design Inputs & Results

The following figures present the DSS Model starting values for the measures that were analyzed for the City's conservation program. Each figure depicts a single measure and there are 26 measures total.

Measure #1 Single and Multifamily Residential Financial Incentives for Irrigation and Landscape Upgrades

Overview				Customer Classes						Results																															
Name: Single and Multifamily Reside										Units: MG																															
Abbr: 1										Average Water Savings (mgd)																															
Category: Default										0.108453																															
Measure Type: Standard Measure										Lifetime Savings - Present Value (\$)																															
										Utility: \$1,022,377																															
										Community: \$1,022,377																															
										Lifetime Costs - Present Value (\$)																															
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										Community: \$99,592,186																															
										Benefit to Cost Ratio																															
										Utility: 0.09																															
										Community: 0.01																															
										Cost of Savings per Unit Volume (\$/mg)																															
										Utility: \$9,298																															
										End Use Savings Per Replacement																															
										Method: Percent																															
										SF Irrigation: 25.0% Avg gpd/acct: 96.5																															
										MF Irrigation: 25.0% Avg gpd/acct: 289.6																															
										F External Leaks: 75.0% Avg gpd/acct: 8.1																															
										F External Leaks: 75.0% Avg gpd/acct: 24.4																															
										Targets																															
										Target Method: Percentage																															
										% of Accts Targeted / yr: 0.220%																															
										Only Effects New Accts: ☐																															
										Comments																															
										>City of Sacramento currently provides rebates for turf conversion, irrigation efficiency upgrades, smart controllers, and laundry to landscape simple greywater systems as part of the River Friendly Landscape program. >Utility Cost: Utility provides rebates of \$1.50 per sq. ft. of landscape converted and provides fixed rebates for irrigation equipment. Utility costs will vary significantly based on devices. Average turf rebate check for this measure in 2024 was \$1,000, average in 2023 was \$1,500, and average in 2022 was \$2,000. Estimating an average of \$1,000 for SF and \$2,500 for MF. >Customer Cost: Cost of the equipment or landscape conversion, minus the rebate. Customer costs per account will vary significantly based on devices. Typical landscape conversions cost at least \$5/sq. ft., so estimating cost of \$3,000 on average per single-family residential site and \$7,500 per multi-family residential site. >Admin Cost: Assume 10% mark-up for staff time to process applications and administer rebates. >Savings: Assumes 25% savings for irrigation and 75% savings on outdoor leaks from installing water efficient landscaping and/or irrigation equipment. Note that any River Friendly Landscape rebate participants are required to also install a smart irrigation controller unless they hand water only. Irrigation savings based on 2022																															
										Costs																															
										View: Utility Details																															
										<table border="1"> <thead> <tr> <th></th> <th>Fixture Costs</th> <th>Admin Costs</th> <th>Util Total</th> </tr> </thead> <tbody> <tr><td>2025</td><td>\$323,506</td><td>\$32,351</td><td>\$355,856</td></tr> <tr><td>2026</td><td>\$327,899</td><td>\$32,790</td><td>\$360,689</td></tr> <tr><td>2027</td><td>\$332,292</td><td>\$33,229</td><td>\$365,521</td></tr> <tr><td>2028</td><td>\$336,685</td><td>\$33,668</td><td>\$370,353</td></tr> <tr><td>2029</td><td>\$341,078</td><td>\$34,108</td><td>\$375,186</td></tr> <tr><td>2030</td><td>\$345,471</td><td>\$34,547</td><td>\$380,018</td></tr> </tbody> </table>					Fixture Costs	Admin Costs	Util Total	2025	\$323,506	\$32,351	\$355,856	2026	\$327,899	\$32,790	\$360,689	2027	\$332,292	\$33,229	\$365,521	2028	\$336,685	\$33,668	\$370,353	2029	\$341,078	\$34,108	\$375,186	2030	\$345,471	\$34,547	\$380,018
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										<table border="1"> <thead> <tr> <th></th> <th>SF</th> <th>MF</th> <th>Total</th> </tr> </thead> <tbody> <tr><td>2025</td><td>278</td><td>23</td><td>301</td></tr> <tr><td>2026</td><td>282</td><td>23</td><td>305</td></tr> <tr><td>2027</td><td>285</td><td>24</td><td>309</td></tr> <tr><td>2028</td><td>288</td><td>24</td><td>312</td></tr> <tr><td>2029</td><td>292</td><td>25</td><td>316</td></tr> <tr><td>2030</td><td>295</td><td>25</td><td>320</td></tr> </tbody> </table>					SF	MF	Total	2025	278	23	301	2026	282	23	305	2027	285	24	309	2028	288	24	312	2029	292	25	316	2030	295	25	320
	SF	MF	Total																																						
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2027	285	24	309																																						
2028	288	24	312																																						
2029	292	25	316																																						
2030	295	25	320																																						
										Water Savings																															
										Units: mgd																															
										Total Savings (mgd)																															
										2025: 0.010462																															
										2026: 0.021072																															
										2027: 0.031830																															
										2028: 0.042738																															
										2029: 0.053794																															
										2030: 0.064998																															

Measure #2 – Landscape Irrigation Restricted to Designated Days and Times

Overview

Name

Landscape Irrigation Restricted to Designated Days and Times

Abbr

2

Category

Default

Measure Type

Standard Measure

Time Period

First Year

2025

Last Year

2055

Measure Length

31

Measure Life

Permanent

Years

10

Repeat

Fixture Cost per Device

	Utility	Customer	Fix/Acct
SF	\$93.00	\$10.00	1
MF	\$93.00	\$10.00	1
CI	\$93.00	\$30.00	1
INST	\$93.00	\$30.00	1
LS	\$93.00	\$30.00	1

Administration Costs

Method:

Percent

Markup Percentage

25%

Description

The City maintains a two day per week watering schedule from March through October, enforced by investigating reports that come into 311 and sending letters to customers watering on the wrong day. Wrong day watering is identified using AMI data and, in some cases, in-person patrolling for verification.

Customer Classes

	SF	MF	CI	INST	LS	OTH

End Uses

	SF	MF	CI	INST	LS	OTH
Toilets						
Urinals						
Lavatory Faucets						
Showers						
Dishwashers						
Clothes Washers						
Process						
Kitchen Spray Rinse						
Internal Leakage						
Baths						
Other						
Irrigation						
Pools						
Wash Down						
Cooling						
Car Washing						
External Leakage						
Outdoor Other						
Non-Lavatory/Kitchen Faucets						

Comments

>Leverage AMI data to identify customers in violation, send out water waste notifications, then perform patrolling to verify compliance in person.
>Utility Cost: Represents staff time to identify and process violations. Includes field time to visit customers. Estimating Approximately 2 hours per account, at the FTE WC Representative rate of \$46.50/hr.
>Customer Cost: Represents average cost per customer to address notifications. In some cases, customers reprogram their irrigation to water on a different day but sometimes incur a fee from the landscaper to make the adjustment.
>Admin Cost: Estimating 25% markup to cover administration costs from phone, email and/or mail communications.
>End use savings: From AWE study "The Use and Effectiveness of Municipal Irrigation Restrictions During Drought", January 2020, utilities can achieve annual savings of 18-20% when operating at Stage 2 and 3 of WSCPs. SFPUC's Irrigation Study is an additional resource to consider. Anticipated irrigation water use savings per account is 10% to be conservative, based on limited current enforcement. If irrigation violations are tracked and followed up on until compliance is achieved, this value could be increased.
>Targets: Assumes about 1% of customers will adjust their irrigation schedules due to this measure, annually.

Results

Units

MG

Average Water Savings (mgd)

0.247568

Lifetime Savings - Present Value (\$)

Utility \$2,336,169
Community \$2,336,169

Lifetime Costs - Present Value (\$)

Utility \$5,367,144
Community \$5,883,694

Benefit to Cost Ratio

Utility 0.44
Community 0.40

Cost of Savings per Unit Volume (\$/mg)

Utility \$1,915

End Use Savings Per Replacement

Method:

Percent

% Savings/Acct

Avg gpd/acct

SF Irrigation

10.0%

96.5

MF Irrigation

10.0%

289.6

CI Irrigation

10.0%

426.8

INST Irrigation

10.0%

2,119.6

LS Irrigation

10.0%

2,669.9

Targets

Target Method:

Percentage

% of Accts Targeted / yr

1.000%

Only Effects New Accts

Costs

View:

Summary

	Utility	Customer	Total
2025	\$170,056	\$16,537	\$186,593
2026	\$172,171	\$16,731	\$188,902
2027	\$174,285	\$16,925	\$191,210
2028	\$176,400	\$17,119	\$193,519
2029	\$178,515	\$17,313	\$195,827
2030	\$180,629	\$17,507	\$198,136
2031	\$182,744	\$17,701	\$200,445
2032	\$184,859	\$17,895	\$202,754
2033	\$186,975	\$18,089	\$205,063
2034	\$189,090	\$18,283	\$207,372
2035	\$191,205	\$18,477	\$209,681
2036	\$193,320	\$18,671	\$211,990
2037	\$195,435	\$18,865	\$214,299
2038	\$197,550	\$19,059	\$216,608
2039	\$199,665	\$19,252	\$218,917
2040	\$201,780	\$19,446	\$221,226
2041	\$203,894	\$19,640	\$223,535
2042	\$206,009	\$19,834	\$225,843
2043	\$208,124	\$20,028	\$228,152
2044	\$210,238	\$20,222	\$230,461
2045	\$212,353	\$20,416	\$232,769
2046	\$219,740	\$21,094	\$240,834
2047	\$227,128	\$21,771	\$248,899
2048	\$234,515	\$22,449	\$256,964
2049	\$241,902	\$23,126	\$265,029
2050	\$249,289	\$23,804	\$273,093
2051	\$256,677	\$24,482	\$281,158
2052	\$264,064	\$25,159	\$289,223
2053	\$271,451	\$25,837	\$297,288
2054	\$278,839	\$26,514	\$305,353
2055	\$286,226	\$27,192	\$313,418

Targets

View

Accounts

	SF	MF	CI	INST	LS	Total
2025	1,264	103	71	9	16	1,463
2026	1,280	105	71	9	16	1,481
2027	1,295	108	71	9	16	1,499
2						

Measure #3 – Commercial and Large Landscape Financial Incentives for Irrigation and Landscape Upgrades

Overview				Customer Classes							Results			
Name		Commercial and Large Landscape Financial Incentives for Irrigation and Landscape Upgrades										Units	MG	
Abbr		3										Average Water Savings (mgd)		
Category		Default										0.055035		
Measure Type		Standard Measure										Lifetime Savings - Present Value (\$)		
Time Period				Measure Life										
First Year		2025		Permanent										
Last Year		2055		Years		10								
Measure Length		31		Repeat										
Fixture Cost per Device				End Uses							End Use Savings Per Replacement			
	Utility	Customer	Fix/Acct									Method:	Percent	
CI	\$2,000.00	\$1,000.00	1										% Savings/Acct	Avg gpd/acct
INST	\$2,000.00	\$1,000.00	1									CI Irrigation	20.0%	426.8
LS	\$3,000.00	\$1,500.00	1									INST Irrigation	20.0%	2,119.6
												LS Irrigation	20.0%	2,669.9
												CI External Leakage	75.0%	28.5
												INST External Leakage	75.0%	132.5
												LS External Leakage	75.0%	140.5
Administration Costs											Targets			
Method:		Percent									Target Method:		Percentage	
Markup Percentage		10%									% of Accts Targeted / yr		0.250%	
											Only Effects New Accts			
Description				Comments										
Currently offered by the City through the River Friendly Landscape Program, this measure provides rebates for commercial and large landscape customers who retrofit their landscapes with water efficient plants and/or upgrade to water efficient irrigation equipment. Multi-family properties of three or more units, commercial, and institutional customers can receive a maximum rebate of \$50,000 for eligible expenses and can be used for grass conversion (currently at \$1.50/sq. ft.), irrigation upgrades, or a combination of both. Labor can also be included, if done by a licensed landscape contractor.				>Utility Cost: Utility provides rebates per of landscape converted and provides fixed rebates for irrigation equipment. Utility costs will vary significantly based on devices and landscape size. Estimating \$2000 on average per commercial and institutional sites and \$3000 per landscape irrigation site. >Customer Cost: Cost of the equipment or landscape conversion, minus the rebate. Customer costs per account will vary significantly based on devices and landscape size. >Admin Cost: Assume 10% mark-up for staff time to process applications and administer rebates. >Savings: Assume 20% savings for irrigation and 75% savings on outdoor leaks from installing water efficient landscaping and/or irrigation equipment. Sources for this value include: 2018 Landscape Rebate Water Savings Study from Valley Water and Southern Nevada Water Authority, 2024 Valley Water participation data. >Targets: Assumes approximately 25 customers participate annually, or ~0.25% of CII & IRR accounts.										
Costs				Targets				Water Savings						
View:		Summary		View		Accounts		Units		mgd				
	Utility	Customer	Total		CI	INST	LS	Total		Total Savings (mgd)				
2025	\$56,794	\$25,815	\$82,609	2025	18	2	4	24	2025	0.005584				
2026	\$57,205	\$26,002	\$83,208	2026	18	2	4	24	2026	0.011225				
2027	\$57,617	\$26,190	\$83,807	2027	18	2	4	24	2027	0.016922				
2028	\$58,029	\$26,377	\$84,406	2028	18	2	4	24	2028	0.022677				
2029	\$58,441	\$26,564	\$85,004	2029	18	2	4	24	2029	0.028489				
2030	\$58,852	\$26,751	\$85,603	2030	18	2	4	25	2030	0.034358				
2031	\$59,264	\$26,938	\$86,202	2031	18	2	4	25	2031	0.040284				
2032	\$59,676	\$27,125	\$86,801	2032	18	2	4	25	2032	0.046267				
2033	\$60,087	\$27,312	\$87,400	2033	18	2	5	25	2033	0.052307				
2034	\$60,499	\$27,500	\$87,999	2034	18	2	5	25	2034	0.058404				
2035	\$60,911	\$27,687	\$88,598	2035	18	2	5	25	2035	0.058975				

Measure #4 – Outdoor Water Use Evaluations

[illegible]

Measure #5 – Large Landscape Water Surveys

Overview				Customer Classes							Results																																																																																																																																																																										
Name	Large Landscape Water Surveys										Units	MG																																																																																																																																																																									
Abbr	5										Average Water Savings (mgd)																																																																																																																																																																										
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Time Period		Measure Life																																																																																																																																																																																			
First Year	2025	Permanent	☐																																																																																																																																																																																		
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Overview						
Name		Enhanced - Water Budgeting/Monitoring for Dedicated Irrigation Meters				
Abbr		6				
Category		Default				
Measure Type		Standard Measure				
Time Period		Measure Life				
First Year	2027	Permanent	☐			
Last Year	2046	Years	2			
Measure Length	20	Repeat	☐			
Fixture Cost per Device						
	Utility	Customer	Fix/Acct			
MF	\$80.00	\$50.00	1			
CI	\$80.00	\$50.00	1			
INST	\$80.00	\$50.00	1			
LS	\$80.00	\$50.00	1			
Administration Costs						
Method:		Percent				
Markup Percentage		15%				
Description						
In 2024, the City of Sacramento began a multi-year agreement with Waterfluence to track and provide feedback on irrigation water use (budget vs. actual) to site managers, property owners, and landscapers. This measure aims to help the City with increasing customer engagement for larger sites and increasing participation in water efficiency programs through sharing irrigation water use data and monitoring water use at these sites.						
Customer Classes						
	SE	MF	CI	INST	LS	OTH
	☐	☐	☐	☐	☐	☐
End Uses						
	SE	MF	CI	INST	LS	OTH
Toilets	☐	☐	☐	☐	☐	☐
Urinals	☐	☐	☐	☐	☐	☐
Lavatory Faucets	☐	☐	☐	☐	☐	☐
Showers	☐	☐	☐	☐	☐	☐
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Process	☐	☐	☐	☐	☐	☐
Kitchen Spray Rinse	☐	☐	☐	☐	☐	☐
Internal Leakage	☐	☐	☐	☐	☐	☐
Baths	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐
Irrigation	☒	☒	☒	☒	☒	☒
Pools	☐	☐	☐	☐	☐	☐
Wash Down	☐	☐	☐	☐	☐	☐
Cooling	☐	☐	☐	☐	☐	☐
Car Washing	☐	☐	☐	☐	☐	☐
External Leakage	☒	☒	☒	☒	☒	☒
Outdoor Other	☐	☐	☐	☐	☐	☐
Non-Lavatory/Kitchen Faucets	☐	☐	☐	☐	☐	☐
Comments						
>City of Sacramento maintains a contract with Waterfluence to track water budgets for 963 sites. This measure would be to incentivize property owners to sign up for the customer facing portal so that they can track their budgets themselves. >Utility Cost: The City pays an average of \$78/site currently, but that does increase 3% each year. Estimating an average of \$80/site. >Customer Cost: Assumes minimal cost to the customer to maintain their budget. >Admin Cost: Estimating a 15% markup for staff to administer this program. >End Use Savings: Waterfluence's 2024 report for the City of Sacramento, analyzing 940 sites, estimates on average customers are 31% over budget or "expected" water use. Customers on average will become more efficient overtime per the study's analysis and 12 year downward trend of overwater. Assumes approximately 25% savings outdoor and 100% on leaks. >Targets: Per client, target about 50 participants annually. Per 2024 report, target sites that are commercial, have less than 1 acre of landscaping, and do not have online stakeholders.						
Costs						
View:		Summary				
	Utility	Customer	Total			
2025	\$0	\$0	\$0			
2026	\$0	\$0	\$0			
2027	\$4,702	\$2,555	\$7,257			
2028	\$4,771	\$2,593	\$7,363			
2029	\$4,839	\$2,630	\$7,469			
2030	\$4,908	\$2,667	\$7,575			
2031	\$4,976	\$2,705	\$7,681			
2032	\$5,045	\$2,742	\$7,787			
2033	\$5,113	\$2,779	\$7,893			
2034	\$5,182	\$2,816	\$7,998			
2035	\$5,251	\$2,854	\$8,104			
Targets						
View		Accounts				
	MF	CI	INST	LS	Total	
2025	0	0	0	0	0	
2026	0	0	0	0	0	
2027	27	18	2	4	51	
2028	28	18	2	4	52	
2029	28	18	2	4	53	
2030	29	18	2	4	53	
2031	29	18	2	4	54	
2032	30	18	2	4	55	
2033	31	18	2	5	56	
2034	31	18	2	5	56	
2035	32	18	2	5	57	
Water Savings						
Units		mgd				
	Total Savings (mgd)					
2025	0.000000					
2026	0.000000					
2027	0.009818					
2028	0.019766					
2029	0.020026					
2030	0.020285					
2031	0.020544					
2032	0.020804					
2033	0.021063					
2034	0.021323					
2035	0.021582					
Results						
Units		MG				
Average Water Savings (mgd)						
0.014280						
Lifetime Savings - Present Value (\$)						
Utility	\$144,133					
Community	\$144,133					
Lifetime Costs - Present Value (\$)						
Utility						

Overview				Customer Classes							Results				
Name		Partnership with Energy Utilities – Incentive				SF	MF	CI	INST	LS	OTH	Units	MG		
Abbr		7													
Category		Default				☒	☒	☐	☐	☐	☐	Average Water Savings (mgd)			
Measure Type		Standard Measure				☒	☒	☐	☐	☐	☐	0.108360			
Time Period				End Uses				Lifetime Savings - Present Value (\$)							
First Year		2025				SF	MF	CI	INST	LS	OTH	Utility		\$1,012,049	
Last Year		2055				Toilets	☐	☐				Community		\$2,817,022	
Measure Length		31				Urinals	☐	☐				Lifetime Costs - Present Value (\$)			
Fixture Cost per Device						Lavatory Faucets	☒	☒				Utility		\$2,106,595	
	Utility	Customer	Fix/Acct			Showers	☒	☒				Community		\$3,261,726	
SF	\$126.00	\$76.00	1			Dishwashers	☐	☐				Benefit to Cost Ratio			
MF	\$126.00	\$76.00	1			Clothes Washers	☐	☐				Utility		0.48	
Administration Costs						Process						Community		0.86	
Method:		Percent				Kitchen Spray Rinse						Cost of Savings per Unit Volume (\$/mg)			
Markup Percentage		10%				Internal Leakage	☐	☐				Utility		\$1,717	
						Baths	☐	☐				End Use Savings Per Replacement			
Description						Other	☐	☐				Method:		Percent	
Current partnership in place with SMUD, the electric utility for City of Sacramento residents, offers incentives to customers to save both water and energy.						Irrigation	☒	☒						% Savings/Acct	Avg gpd/acct
						Pools	☐	☐				SF Lavatory Faucets		4.5%	7.2
						Wash Down	☐	☐				MF Lavatory Faucets		4.5%	37.1
						Cooling	☐	☐				SF Showers		4.0%	39.7
						Car Washing	☐	☐				MF Showers		4.0%	185.6
						External Leakage	☒	☐				SF Irrigation		10.0%	96.5
						Outdoor Other	☐	☐				MF Irrigation		10.0%	289.6
						Non-Lavatory/Kitchen Faucets	☒	☒				SF External Leakage		25.0%	8.1
												MF External Leakage		25.0%	24.4
												SF Non-Lavatory/Kitchen Faucets		3.0%	25.3
Comments												MF Non-Lavatory/Kitchen Faucets		3.0%	111.4
>City of Sacramento provides an instant rebate for smart controllers from the SMUD energy store. Additional items customers can get rebates for include showerheads, aerators, and drip kits. >Utility cost: Cost of rebates and giveaways: controllers - \$125, showerhead & aerator kits-\$10 . Per past participation, most participants only apply for controllers so assuming 1/10 cost per showerhead & aerator kit per account (1 out of every 10 applicants). >Customer cost: Remaining cost of smart controller (Rachio) & showerhead/aerator kit- \$75 + \$6/10 = ~ \$76. >Admin cost: Assumes 10% admin markup to coordinate this measure with SMUD. >End use savings: Savings assume the following fixtures are replaced: 2.5 gpm showerhead with a 1.5 gpm showerhead and 2.2 gpm lavatory and non-lavatory faucet aerators with 1.5 gpm kitchen faucet aerators and 1.2 gpm lav faucet aerators. (divided by 10 to align with participation) -Assumes smart controllers save approximately 10% of outdoor water when installed, per an analysis of City of Sacramento's 2022 smart controller rebate participants. >Targets: Per recent past participation (July 2023-July 2024), about 650 smart controller rebates are distributed annually. Assumes this rate will continue.												Targets			
												Target Method:		Percentage	
												% of Accts Targeted / yr		0.350%	
												Only Effects New Accts		☐	
Costs				Targets				Water Savings							
View:		Utility Details		View		Accounts		Units		mgd					
	Fixture Costs	Admin Costs	Util Total		SF	MF	Total		Total Savings (mgd)						
2025	\$60,304	\$6,030	\$66,334	2025	443	36	479	2025	0.008065						
2026	\$61,079	\$6,108	\$67,187	2026	448	37	485	2026	0.016214						
2027	\$61,855	\$6,185	\$68,040	2027	453	38	491	2027	0.024450						
2028	\$62,631	\$6,263	\$68,894	2028	459	39	497	2028	0.032775						
2029	\$63,406	\$6,341	\$69,747	2029	464	39	503	2029	0.041192						
2030	\$64,182	\$6,418	\$70,600	2030	469	40	509	2030	0.049703						
2031	\$64,958	\$6,496	\$71,453												

Measure #8 – Residential Leak Repair Assistance Rebate

Overview				Customer Classes							Results							
Name	Residential Leak Repair Assistance Rebate										Units	MG						
Abbr	8										Average Water Savings (mgd)							
Category	Default										0.056524							
Measure Type	Standard Measure										Lifetime Savings - Present Value (\$)							
											Utility			\$538,575				
											Community			\$2,297,045				
											Lifetime Costs - Present Value (\$)							
											Utility			\$1,291,923				
											Community			\$13,234,071				
											Benefit to Cost Ratio							
											Utility			0.42				
											Community			0.17				
											Cost of Savings per Unit Volume (\$/mg)							
											Utility			\$2,019				
											End Use Savings Per Replacement							
											Method:			Percent				
														% Savings/Acct	Avg gpd/acct			
											SF Internal Leakage			330.0%	25.3			
											MF Internal Leakage			330.0%	129.9			
											SF External Leakage			330.0%	8.1			
											MF External Leakage			330.0%	24.4			
											Targets							
											Target Method:			Percentage				
											% of Accts Targeted / yr			0.050%				
											Only Effects New Accts			☐				
											End Uses							
											SF			MF	CI	INST	LS	OTH
											☒			☒	☐	☐	☐	☐
											Toilets			☐	☐	☐	☐	☐
											Urinals			☐	☐	☐	☐	☐
											Lavatory Faucets			☐	☐	☐	☐	☐
											Showers			☐	☐	☐	☐	☐
											Dishwashers			☐	☐	☐	☐	☐
											Clothes Washers			☐	☐	☐	☐	☐
											Process			☐	☐	☐	☐	☐
											Kitchen Spray Rinse			☐	☐	☐	☐	☐
											Internal Leakage			☒	☒	☐	☐	☐
											Baths			☐	☐	☐	☐	☐
											Other			☐	☐	☐	☐	☐
											Irrigation			☐	☐	☐	☐	☐
											Pools			☐	☐	☐	☐	☐
											Wash Down			☐	☐	☐	☐	☐
											Cooling			☐	☐	☐	☐	☐
											Car Washing			☐	☐	☐	☐	☐
											External Leakage			☒	☒	☐	☐	☐
											Outdoor Other			☐	☐	☐	☐	☐
											Non-Lavatory/Kitchen Faucets			☐	☐	☐	☐	☐
											Comments							
											>This measure is offered for customers that do not qualify for Leak Free Sacramento (Measure 9). Most leaks are main line leaks (customer side), according to City staff. >Utility Cost: Assumes average of \$350 to cover partial leak repairs. The maximum rebate value is \$500. >Customer Cost: Repairs are typically costly, assuming up to \$10,000 total and average of \$6,000. >Admin Cost: .25 of 1 Specialist's time is spent administering this measure, or ~\$27,160 annually. This equates to ~\$250/participant. >End Use Savings: Savings might be over 200% if based on a targeted account's using 2-4 times the amount of the previous year's water use. Assume 1 leak per SF, 2 leaks per MF (typically duplex owners), as these programs typically are for owner-occupied residences. source: AWE 2023 Leak Alert Study https://www.allianceforwaterefficiency.org/resources/to-pic/evaluation-ami-enabled-proactive-leak-notification-programs Savings updated to 330% based on City of Sacramento participation data. >Targets: Considering the \$40,000 budget for this measure, assumes target about 75 customers annually.							
											Costs							
											View:			Summary				
											Utility			Customer	Total			
											2025			\$40,681	\$376,043	\$416,724		
											2026			\$41,204	\$380,880	\$422,084		
											2027			\$41,728	\$385,717	\$427,444		
											2028			\$42,251	\$390,554	\$432,804		
											2029			\$42,774	\$395,390	\$438,165		
											2030			\$43,297	\$400,227	\$443,525		
											2031			\$43,821	\$405,065	\$448,886		
											2032			\$44,344	\$409,902	\$454,246		
											2033			\$44,867	\$414,740	\$459,607		
											2034			\$45,391	\$419,578	\$464,968		
											2035			\$45,914	\$424,415	\$470,329		
											Targets							
											View:			Accounts				
											SF			MF	Total			
											2025			63	5	68		
											2026			64	5	69		
											2027			65	5	70		
											2028			66	6	71		
											2029			66	6	72		
											2030			67	6	73		
											2031			68	6	74		
											2032			69	6	75		
											2033			69	6	75		
											2034			70	6	76		
											2035			71	6	77		
											Water Savings							
											Units			mgd				
											Total Savings (mgd)							
											2025			0.009597				
											2026			0.019339				
											2027			0.029225				
											2028			0.039255				
											2029			0.049430				
											2030			0.050152				
											2031			0.050875				
											2032			0.051597				
											2033			0.052320				
											2034			0.053042				
											2035			0.053765				

Measure #9 – Leak Free Sacramento

[illegible]

Measure #10 – Water Loss Tracking

Overview		
Name	Water Loss Tracking	
Abbr	10	
Category	Default	
Measure Type	Water Loss Measure	
Time Period		
First Year	2025	
Backlog Costs		
Total Backlog Work Costs	\$775,000	
Years to Complete Backlog	31	
Maintenance Costs		
Annual Maintenance Costs	\$25,000	
Target		
Total GPCD Reduction	0.2	

Description	
> This measure models conservation department time used for tracking and reporting water loss information as it relates to the California water loss standard and ties to the Urban Water Use Objective.	
> Water loss efforts to find and repair leaks in the distribution system to reduce real water loss are currently funded by the City of Sacramento operations team and budget, which is not modeled here.	
>This measure assumes system water loss actions such as proactive leak detection and leak repairs would be handled by existing crews at no extra cost.	

Results	
Units	MG
Average Water Savings (mgd)	
0.075784	
Lifetime Savings - Present Value (\$)	
Utility	\$689,818
Community	\$689,818
Lifetime Costs - Present Value (\$)	
Utility	\$646,137
Community	\$646,137
Benefit to Cost Ratio	
Utility	1.07
Community	1.07
Cost of Savings per Unit Volume (\$/mg)	
Utility	\$753

Comments	
> Backlog Costs: Annual maintenance costs x the number of years in forecast.	
> Maintenance Costs: Assume costs for a conservation representative to analyze data and flag potential issues (approximately 40 hours of staff time per month, or a total of three weeks per year, at the fully burdened WC specialist rate of \$56/hour).	
> Target: Assume minimal reductions - this is for tracking only. Reductions would be from further utilizing newly available technologies and AMI water meter data to identify and locate leaks in the system.	

Costs	
	Utility
2025	\$25,000
2026	\$25,000
2027	\$25,000
2028	\$25,000
2029	\$25,000
2030	\$25,000
2031	\$25,000
2032	\$25,000
2033	\$25,000
2034	\$25,000
2035	\$25,000

Targets	
	Projected NRW Percent
2025	14.5%
2026	14.5%
2027	14.5%
2028	14.5%
2029	14.5%
2030	14.5%
2031	14.5%
2032	14.5%
2033	14.5%
2034	14.4%
2035	14.4%

Water Savings (MG/d)	
	Total Savings
2025	0.003425
2026	0.006982
2027	0.010669
2028	0.014488
2029	0.018437
2030	0.022518
2031	0.026730
2032	0.031073
2033	0.035547
2034	0.040153
2035	0.044889

Measure #11 – Public Outreach & Education

Overview				Customer Classes							Results					
Name	Public Outreach & Education										Units	MG				
Abbr	11				SF	MF	CI	INST	LS	OTH	Average Water Savings (mgd)					
Category	Default				☒	☐	☐	☐	☐	☐	0.116260					
Measure Type	Standard Measure			End Uses							Lifetime Savings - Present Value (\$)					
Time Period				Measure Life							Utility	\$1,122,285				
First Year	2025			Permanent	☐						Community	\$5,884,059				
Last Year	2055			Years	2						Lifetime Costs - Present Value (\$)					
Measure Length	31			Repeat	☐						Utility	\$9,761,613				
Fixture Cost per Device											Community	\$13,247,903				
	Utility	Customer	Fix/Acct								Benefit to Cost Ratio					
SF	\$1.40	\$1.00	1								Utility	0.11				
MF	\$1.40	\$1.00	8								Community	0.44				
Administration Costs											Cost of Savings per Unit Volume (\$/mg)					
Method:	Percent										Utility	\$7,416				
Markup Percentage				100%							End Use Savings Per Replacement					
Description				Comments							Method:	Percent				
Public outreach efforts currently include direct ad buys as well as educational materials, community events, social media content, and City Express articles that are sent out to 250,000 email accounts. This measure would continue indefinitely and evolve based on public participation and evaluation of long term conservation targets. Near-term public outreach programs should focus on the importance of replacing Non-Functional Turf with local native plants and the irrigation requirements of trees.				>Utility Cost: \$300k spent annually, including the 1 FTE staff member (salary for staff is \$150k), so \$150k on non-staff costs. Includes advertisement buys, typically three per year. This measure is currently funded in-house. >Admin Cost: 1 FTE - Public Information Coordinator - ~150k annually. >Customer Cost: Assumes minimal cost to the customer to make small improvements. >End Use Savings: Assumes savings lasts 2 year, assume minimal savings on all end uses due to behavioral changes. >Targets: 50% of accounts per year.							%		% Savings/Acct		Avg gpd/acct	
											SF Toilets		0.2%		30.3	
											MF Toilets		0.2%		155.9	
											SF Lavatory Faucets		0.2%		7.2	
											MF Lavatory Faucets		0.2%		37.1	
											SF Showers		0.2%		39.7	
											MF Showers		0.2%		185.6	
											SF Dishwashers		0.2%		2.2	
											MF Dishwashers		0.2%		11.1	
											SF Clothes Washers		0.2%		28.9	
MF Clothes Washers		0.2%		185.6												
SF Internal Leakage		0.2%		25.3												
MF Internal Leakage		0.2%		129.9												
SF Baths		0.2%		7.2												
MF Baths		0.2%		37.1												
SF Other		0.2%		14.5												
MF Other		0.2%		74.2												
SF Irrigation		0.2%		96.5												
MF Irrigation		0.2%		289.6												
SF Pools		0.2%		2.3												
MF Pools		0.2%		7.0												
SF Wash Down		0.2%		4.6												
MF Wash Down		0.2%		14.0												
SF Car Washing		0.2%		4.6												
MF Car Washing		0.2%		14.0												
SF External Leakage		0.2%		8.1												
MF External Leakage		0.2%		24.4												
SF Non-Lavatory/Kitchen Faucets		0.2%		25.3												
MF Non-Lavatory/Kitchen Faucets		0.2%		111.4												
Costs				Targets				Water Savings								
View:	Utility Details			View	Accounts			Units	mgd							
	Fixture Costs	Admin Costs	Util Total		SF	MF	Total		Total Savings (mgd)							
2025	\$146,215	\$146,215	\$292,430	2025	63,219	5,153	68,371	2025	0.050690							
2026	\$148,612	\$148,612	\$297,224	2026	63,979	5,272	69,251	2026	0.101365							
2027	\$151,009	\$151,009	\$302,019	2027	64,740	5,390	70,130	2027	0.102113							
2028	\$153,407	\$153,407	\$306,813	2028	65,500	5,509	71,010	2028	0.102866							
2029	\$155,804	\$155,804	\$311,607	2029	66,261	5,628	71,889	2029	0.103621							
2030	\$158,201	\$158,201	\$316,402	2030	67,021	5,747	72,769	2030	0.104420							
2031	\$160,598	\$160,598	\$321,197	2031	67,782	5,866	73,648	2031	0.105259							
2032	\$162,996	\$162,996	\$325,992	2032	68,542	5,985	74,528	2032	0.106138							
2033	\$165,394	\$165,394	\$330,787	2033	69,303	6,104	75,407	2033	0.107053							
2034	\$167,791	\$167,791	\$335,582	2034	70,063	6,223	76,287	2034	0.108002							
2035	\$170,189	\$170,189	\$340,377	2035	70,824	6,342	77,166	2035	0.108981							

Measure #12 – Indoor Water Surveys

Overview			
Name	Indoor Water Surveys		
Abbr	12		
Category	Default		
Measure Type	Standard Measure		
Time Period		Measure Life	
First Year	2025	Permanent	☐
Last Year	2030	Years	5
Measure Length	6	Repeat	☐
Fixture Cost per Device			
	Utility	Customer	Fix/Acct
SF	\$52.00	\$20.00	1
MF	\$52.00	\$20.00	8
Administration Costs			
Method:	Percent		
Markup Percentage		15%	
Description			
Indoor water surveys are currently offered for existing single family and multifamily residential customers, often virtually/remotely in response to a spike in water use.			
Comments			
>Utility Cost: Cost to conduct surveys in house. Estimating 1 hour per SF & MF account for sending out letters (once/mo. during irrigation season) and conducting on-site surveys. Assumes fully burdened rate of WC Specialist is ~\$52/hr. >Admin Cost: Estimated mark-up cost for administering measure. Administration includes intern's time to fold letters and go to the post office (hoping to make this more automated in the future). >Customer Cost: Cost to implement recommended water efficiency improvements. This will vary greatly, but estimating \$20 per customer on average considering some folks will make very minor adjustments. >End Use Savings: Savings are conservative since end uses will vary based on what was identified during the survey, and so not to overlap with savings from other indoor measures. >Targets: The City sends targeted letters to residential customers that have high summer time water use. Approximately 2% response rate received. Assumes half of those make improvements to indoor water use - targeting 1%.			
Costs			
View:	Summary		
	Utility	Customer	Total
2025	\$124,909	\$41,776	\$166,685
2026	\$126,957	\$42,461	\$169,418
2027	\$129,005	\$43,146	\$172,151
2028	\$131,053	\$43,830	\$174,883
2029	\$133,101	\$44,515	\$177,616
2030	\$135,149	\$45,200	\$180,349
2031	\$0	\$0	\$0
2032	\$0	\$0	\$0
2033	\$0	\$0	\$0
2034	\$0	\$0	\$0
2035	\$0	\$0	\$0
Targets			
View	Accounts		
	SF	MF	Total
2025	1,264	103	1,367
2026	1,280	105	1,385
2027	1,295	108	1,403
2028	1,310	110	1,420
2029	1,325	113	1,438
2030	1,340	115	1,455
2031	0	0	0
2032	0	0	0
2033	0	0	0
2034	0	0	0
2035	0	0	0
Results			
Units	MG		
Average Water Savings (mgd)			
0.072008			
Lifetime Savings - Present Value (\$)			
Utility	\$800,541		
Community	\$5,151,594		
Lifetime Costs - Present Value (\$)			
Utility	\$755,829		
Community	\$1,008,614		
Benefit to Cost Ratio			
Utility	1.06		
Community	5.11		
Cost of Savings per Unit Volume (\$/mg)			
Utility	\$927		
End Use Savings Per Replacement			
Method:	Percent		
	% Savings/Acct	Avg gpd/acct	
SF Toilets	10.0%	30.3	
MF Toilets	10.0%	155.9	
SF Lavatory Faucets	10.0%	7.2	
MF Lavatory Faucets	10.0%	37.1	
SF Showers	10.0%	39.7	
MF Showers	10.0%	185.6	
SF Dishwashers	10.0%	2.2	
MF Dishwashers	10.0%	11.1	
SF Clothes Washers	10.0%	28.9	
MF Clothes Washers	10.0%	185.6	
SF Internal Leakage	100.0%	25.3	
MF Internal Leakage	100.0%	129.9	
SF Baths	10.0%	7.2	
MF Baths	10.0%	37.1	
SF Other	10.0%	14.5	
MF Other	10.0%	74.2	
SF Non-Lavatory/Kitchen Faucets	10.0%	25.3	
MF Non-Lavatory/Kitchen Faucets	10.0%	111.4	
Targets			
Target Method:	Percentage		
% of Accts Targeted / yr		1.000%	
Only Effects New Accts		☐	
Water Savings			
Units	mgd		
Total Savings (mgd)			
2025	0.073226		
2026	0.146802		
2027	0.220756		
2028	0.295110		
2029	0.369883		
2030	0.373740		
2031	0.299977		
2032	0.225792		
2033	0.151110		
2034	0.075865		
2035	0.000000		

Measure #13 – Residential Plumber Initiated High Efficiency Toilet Retrofit Program

Overview				Customer Classes							Results			
Name		Residential Plumber Initiated High Efficiency Toilet Retrofit Program				SF	MF	CI	INST	LS	OTH	Units	MG	
Abbr		13				☒	☒	☐	☐	☐	☐			
Category		Default				☒	☒	☐	☐	☐	☐			
Measure Type		Standard Measure				☒	☒	☐	☐	☐	☐			
Time Period				Measure Life										
First Year		2028		Permanent		☒								
Last Year		2055												
Measure Length		28												
Fixture Cost per Device														
	Utility	Customer	Fix/Acct											
SF	\$600.00	\$0.00	2											
MF	\$600.00	\$0.00	10											
Administration Costs														
Method:		Percent												
Markup Percentage		10%												
Description														
Licensed plumbers, pre-qualified by the Utility would solicit customers directly. Qualified low-income customers would get new HETs and other indoor fixtures installed for free by a pre-approved plumber under contract with the City. This program is designed for disadvantaged-qualified customers. This measure focuses on lowering indoor GPCD for compliance with the Urban Water Use Objective from the "Making Conservation a California Way of Life" regulation.														
Comments														
End Uses														
		SF	MF	CI	INST	LS	OTH							
Toilets		☒	☒	☐	☐	☐	☐							
Urinals		☐	☐	☐	☐	☐	☐							
Lavatory Faucets		☒	☒	☐	☐	☐	☐							
Showers		☒	☒	☐	☐	☐	☐							
Dishwashers		☐	☐	☐	☐	☐	☐							
Clothes Washers		☐	☐	☐	☐	☐	☐							
Process		☐	☐	☐	☐	☐	☐							
Kitchen Spray Rinse		☐	☐	☐	☐	☐	☐							
Internal Leakage		☒	☒	☐	☐	☐	☐							
Baths		☐	☐	☐	☐	☐	☐							
Other		☐	☐	☐	☐	☐	☐							
Irrigation		☐	☐	☐	☐	☐	☐							
Pools		☐	☐	☐	☐	☐	☐							
Wash Down		☐	☐	☐	☐	☐	☐							
Cooling		☐	☐	☐	☐	☐	☐							
Car Washing		☐	☐	☐	☐	☐	☐							
External Leakage		☐	☐	☐	☐	☐	☐							
Outdoor Other		☐	☐	☐	☐	☐	☐							
Non-Lavatory/Kitchen Faucets		☒	☒	☐	☐	☐	☐							
End Use Savings Per Replacement														
Method:		Percent												
		% Savings/Acct	Avg gpd/acct											
SF Toilets		50.0%	30.3											
MF Toilets		50.0%	155.9											
SF Lavatory Faucets		45.0%	7.2											
MF Lavatory Faucets		45.0%	37.1											
SF Showers		40.0%	39.7											
MF Showers		40.0%	185.6											
SF Internal Leakage		90.0%	25.3											
MF Internal Leakage		90.0%	129.9											
SF Non-Lavatory/Kitchen Faucets		32.0%	25.3											
MF Non-Lavatory/Kitchen Faucets		32.0%	111.4											
Targets														
Target Method:		Percentage												
		% of Accts Targeted / yr	0.020%											
		Only Effects New Accts	☐											
Costs				Targets				Water Savings						
View:		Utility Details		View		Fixtures		Units		mgd				
	Fixture Costs	Admin Costs	Util Total		SF	MF	Total		Total Savings (mgd)					
2025	\$0	\$0	\$0	2025	0	0	0	2025	0.000000					
2026	\$0	\$0	\$0	2026	0	0	0	2026	0.000000					
2027	\$0	\$0												

Measure #14 – Residential Clothes Washer Rebate

Overview				Customer Classes							Results	
Name	Residential Clothes Washer Rebate			SF	MF	CI	INST	LS	OTH	Units	MG	
Abbr	14									Average Water Savings (mgd)		
Category	Default									0.002945		
Measure Type	Standard Measure			Lifetime Savings - Present Value (\$)								
Time Period First Year 2025 Last Year 2027 Measure Length 3				Measure Life Permanent ☐ Years 13 Repeat ☐							Utility \$31,894 Community \$421,004	
Fixture Cost per Device Utility \$125.00 Customer \$875.00 Fix/Acct 1				End Uses Toilets ☐ Urinals ☐ Lavatory Faucets ☐ Showers ☐ Dishwashers ☐ Clothes Washers ☒ Process ☐ Kitchen Spray Rinse ☐ Internal Leakage ☐ Baths ☐ Other ☐ Irrigation ☐ Pools ☐ Wash Down ☐ Cooling ☐ Car Washing ☐ External Leakage ☐ Outdoor Other ☐ Non-Lavatory/Kitchen Faucets ☐							Lifetime Costs - Present Value (\$) Utility \$88,845 Community \$586,380	
Administration Costs Method: Percent Markup Percentage 25%				Benefit to Cost Ratio Utility 0.36 Community 0.72							Cost of Savings per Unit Volume (\$/mg) Utility \$2,664	
Description Currently offered by the City, this measure provides rebates for efficient clothes washing machines to residential properties, primarily single family homes. This measure is administered by CalWEP.				End Use Savings Per Replacement Method: Percent % Savings/Acct 50.0% Avg gpd/acct 28.9 SF Clothes Washers							Targets Target Method: Percentage % of Accts Targeted / yr 0.150% Only Effects New Accts ☐	
Comments >Current rebate is only for single family residential customers. >Utility Cost: Rebate cost of \$125 per device. >Customer Cost: Remaining cost of device. Per approved devices list, average device cost is ~\$1,000. >Admin Cost: This measure is administered by CalWEP, including a \$25 fee per washer and also a small mark-up for the City's time for any communications and follow up related to the measure. >End Use Savings: Estimating approximately 50% water savings for switching from a low or medium efficiency washer to an ultra high efficiency washer, based on the difference in integrated water factors (IWF). >Target: The City distributes approximately 200 clothes washer rebates annually, or ~ 0.1% of SFR accounts.												
Costs View: Summary				Targets View: Accounts							Water Savings Units mgd	
	Utility	Customer	Total		SF	Total				Total Savings (mgd)		
2025	\$29,634	\$165,950	\$195,584	2025	190	190			2025	0.002741		
2026	\$29,990	\$167,946	\$197,936	2026	192	192			2026	0.005384		
2027	\$30,347	\$169,942	\$200,289	2027	194	194			2027	0.007919		
2028	\$0	\$0	\$0	2028	0	0			2028	0.007705		
2029	\$0	\$0	\$0	2029	0	0			2029	0.007482		
2030	\$0	\$0	\$0	2030	0	0			2030	0.007279		
2031	\$0	\$0	\$0	2031	0	0			2031	0.007094		
2032	\$0	\$0	\$0	2032	0	0			2032	0.006924		
2033	\$0	\$0	\$0	2033	0	0			2033	0.006770		
2034	\$0	\$0	\$0	2034	0	0			2034	0.006629		
2035	\$0	\$0	\$0	2035	0	0			2035	0.006501		

Measure #15 – CII Customized Top Users Incentives

Overview

CII Customized Top Users Incentives

Abbr15

CategoryDefault

Measure TypeStandard Measure

Time Period

First Year2028

Last Year2048

Measure Length21

Measure Life

Permanent

Years15

Repeat

Fixture Cost per Device

	Utility	Customer	Fix/Acct
CI	\$50,000.00	\$25,000.00	1
INST	\$50,000.00	\$25,000.00	1

Administration Costs

Method:Percent

Markup Percentage5%

Description

This measure would provide a free water use assessment (otherwise known as water audit) to commercial, industrial, and institutional customers, followed by a free report where the Utility will present recommendations for efficiency upgrades. Financial incentives will also be provided after analyzing the cost benefit ratio of the proposed project(s). Incentives are tailored to each individual site as each site has varying water savings potentials. Incentives will be granted at the sole discretion of the Utility while funding lasts. This measure aligns with CII BMPs for compliance with the Urban Water Use Objective from the "Making Conservation a California Way of Life" regulation.

Customer Classes

	SF	MF	CI	INST	LS	OTH

End Uses

	SF	MF	CI	INST	LS	OTH
Toilets						
Urinals						
Lavatory Faucets						
Showers						
Dishwashers						
Clothes Washers						
Process						
Kitchen Spray Rinse						
Internal Leakage						
Baths						
Other						
Irrigation						
Pools						
Wash Down						
Cooling						
Car Washing						
External Leakage						
Outdoor Other						
Non-Lavatory/Kitchen Faucets						

Comments

>This measure targets top users for indoor water uses only (outdoor incentives provided in alternate measures).

>Utility Cost: Cost to do a preliminary onsite assessment and report, cost of rebate, and cost for follow-up inspection. The City currently provides rebates of up to \$50,000 per site but has received very little interest to date. Assumes average applicant requests full rebate cap. If the city were to outsource the surveys + report, would likely cost around \$8,000 per site (not including incentives), dependent on site size and equipment.

>Customer Cost: Assumes business has to cover some costs - will vary but assuming they will pay for on average half of what they are getting via rebate.

>Admin Cost: Assumes 5% markup to administer this measure, representing staff time to process rebates.

>End Use Savings: Savings will vary greatly depending on the project, but should be significant considering this targets high users.

>Targets: Target top users. Due to limited budget, assumes approximately 5 participants in this measure annually.

Results

UnitsMG

Average Water Savings (mgd)0.054013

Lifetime Savings - Present Value (\$)

Utility\$503,352

Community\$2,967,317

Lifetime Costs - Present Value (\$)

Utility\$4,723,841

Community\$6,973,290

Benefit to Cost Ratio

Utility0.11

Community0.43

Cost of Savings per Unit Volume (\$/mg)

Utility\$7,724

End Use Savings Per Replacement

Method:Percent

	% Savings/Acct	Avg gpd/acct
CI Toilets	75.0%	152.7
INST Toilets	75.0%	302.3
CI Urinals	75.0%	30.2
INST Urinals	75.0%	60.5
CI Lavatory Faucets	75.0%	33.3
INST Lavatory Faucets	75.0%	60.5
CI Showers	75.0%	136.1
INST Showers	75.0%	362.7
CI Dishwashers	75.0%	90.7
INST Dishwashers	75.0%	120.9
CI Clothes Washers	75.0%	226.8
INST Clothes Washers	75.0%	362.7
CI Process	75.0%	378.0
CI Kitchen Spray Rinse	75.0%	75.6
INST Kitchen Spray Rinse	75.0%	120.9
CI Internal Leakage	75.0%	151.2
INST Internal Leakage	75.0%	201.5
CI Other	75.0%	140.6
INST Other	75.0%	262.0
CI Non-Lavatory/Kitchen Faucets	75.0%	96.8
INST Non-Lavatory/Kitchen Faucets	75.0%	161.2

Targets

Target Method:Percentage

% of Accts Targeted / yr0.060%

Only Effects New Accts

Costs

View:Utility Details

	Fixture Costs	Admin Costs	Util Total
2025	\$0	\$0	\$0
2026	\$0	\$0	\$0
2027	\$0	\$0	\$0
2028	\$241,984	\$12,099	\$254,084
2029	\$242,914	\$12,146	\$255,060
2030	\$243,845	\$12,192	\$256,037
2031	\$244,775	\$12,239	\$257,014
2032	\$245,705	\$12,285	\$257,991
2033	\$246,636	\$12,332	\$258,967
2034	\$247,566	\$12,378	\$259,944
2035	\$248,496	\$12,425	\$260,921

Targets

View:Accounts

	CI	INST	Total
2025	0	0	0
2026	0	0	0
2027	0	0	0
2028	4	1	5
2029	4	1	5
2030	4	1	5
2031	4	1	5
2032	4	1	5
2033	4	1	5
2034	4	1	5
2035	4	1	5

Water Savings

Unitsmgd

	Total Savings (mgd)
2025	0.000000
2026	0.000000
2027	0.000000
2028	0.005682
2029	0.011376
2030	0.017084
2031	0.022805
2032	0.028541
2033	0.034292
2034	0.040057
2035	0.045838

Measure #16 – CII Water Savings Performance Program

Overview				Customer Classes							Results			
Name	CII Water Savings Performance Program			GF	MF	CI	INST	LS	OTH	Units	MG			
Abbr	16									Average Water Savings (mgd)	0.100754			
Category	Default			End Uses						Lifetime Savings - Present Value (\$)				
Measure Type	Standard Measure			Toilets						Utility	\$945,745			
Time Period				Urinals						Community	\$3,220,737			
First Year	2025			Lavatory Faucets						Lifetime Costs - Present Value (\$)				
Last Year	2055			Showers						Utility	\$2,181,171			
Measure Length	31			Dishwashers						Community	\$2,842,132			
Measure Life				Clothes Washers						Benefit to Cost Ratio				
Permanent	☐			Process						Utility	0.43			
Years	15			Kitchen Spray Rinse						Community	1.13			
Repeat	☐			Internal Leakage						Cost of Savings per Unit Volume (\$/mg)				
Fixture Cost per Device				Baths						Utility	\$1,912			
	Utility	Customer	Fix/Acct	Other						End Use Savings Per Replacement				
CI	\$15,000.00	\$5,000.00	1	Irrigation						Method:	Percent			
INST	\$15,000.00	\$5,000.00	1	Pools						% Savings/Acct	Avg gpd/acct			
Administration Costs				Wash Down						CI Dishwashers	250.0%	90.7		
Method:	Percent			Cooling						INST Dishwashers	250.0%	120.9		
Markup Percentage	10%			Car Washing						CI Process	250.0%	378.0		
Description				External Leakage						CI Other	250.0%	140.6		
The City of Sacramento provides a rebate of \$0.50/CCF saved to CII sites within the service area. Water savings are estimated using the number of days operated per year and the expected life of the equipment (capped at 10 years). Participants are eligible for one rebate per site per program year for up to \$50,000. Equipment and projects must remain in use for 10 years or the life of the equipment whichever is less. This measure aligns with CII BMPs for compliance with the Urban Water Use Objective from the "Making Conservation a California Way of Life" regulation.				Outdoor Other						INST Other	250.0%	262.0		
				Non-Lavatory/Kitchen Faucets								CI Cooling	250.0%	85.4
				Comments				>Utility Cost: Assuming an average rebate offered is \$15k per account. This measure is capped at \$50k per account. >Customer Cost: Assumes many of these large projects will need some additional investment from the customer. >Admin Cost: Assumes 10% markup for staff time to process applications and administer the rebates. >End Use Savings: Approved projects will be for high savings proposals only. Estimating high savings since targeting high users compared to an average account's usage. Upgrades would be for cooling, flushing and bottling equipment, sterilization equipment, and high efficiency ware washers. >Targets: Targeting 5 users annually.				Targets		
												Target Method: Percentage % of Accts Targeted / yr 0.060% Only Effects New Accts ☐		
Costs				Targets				Water Savings						
View:	Utility Details			View	Accounts			Units	mgd					
	Fixture Costs	Admin Costs	Util Total		CI	INST	Total		Total Savings (mgd)					
2025	\$71,758	\$7,176	\$78,934	2025	4	1	5	2025	0.008245					
2026	\$72,037	\$7,204	\$79,241	2026	4	1	5	2026	0.016521					
2027	\$72,316	\$7,232	\$79,548	2027	4	1	5	2027	0.024830					
2028	\$72,595	\$7,260	\$79,855	2028	4	1	5	2028	0.033171					
2029	\$72,874	\$7,287	\$80,162	2029	4	1	5	2029	0.041544					
2030	\$73,153	\$7,315	\$80,469	2030	4	1	5	2030	0.049950					
2031	\$73,432	\$7,343	\$80,776	2031	4	1	5	2031	0.058387					
2032	\$73,712	\$7,371	\$81,083	2032	4	1	5	2032	0.066857					
2033	\$73,991	\$7,399	\$81,390	2033	4	1	5	2033	0.075359					
2034	\$74,270	\$7,427	\$81,697	2034	4	1	5	2034	0.083893					
2035	\$74,549	\$7,455	\$82,004	2035	4	1	5	2035	0.092459					

Measure #17 – CII Rebates to Replace Inefficient Equipment

Overview				Customer Classes							Results						
Name	CII Rebates to Replace Inefficient Equipment										Units	MG					
Abbr	17										Average Water Savings (mgd)						
Category	Default										0.010012						
Measure Type	Standard Measure										Lifetime Savings - Present Value (\$)						
											Utility	\$94,069					
											Community	\$355,039					
											Lifetime Costs - Present Value (\$)						
											Utility	\$237,533					
											Community	\$306,383					
											Benefit to Cost Ratio						
											Utility	0.40					
											Community	1.16					
											Cost of Savings per Unit Volume (\$/mg)						
											Utility	\$2,095					
											End Use Savings Per Replacement						
											Method:	Percent					
												% Savings/Acct	Avg gpd/acct				
											CI Toilets	10.0%	152.7				
											INST Toilets	10.0%	302.3				
											CI Urinals	10.0%	30.2				
											INST Urinals	10.0%	60.5				
											CI Lavatory Faucets	10.0%	33.3				
											INST Lavatory Faucets	10.0%	60.5				
											CI Kitchen Spray Rinse	10.0%	75.6				
											INST Kitchen Spray Rinse	10.0%	120.9				
											CI Internal Leakage	10.0%	151.2				
											INST Internal Leakage	10.0%	201.5				
											CI Other	10.0%	140.6				
											INST Other	10.0%	262.0				
											CI Cooling	10.0%	85.4				
											INST Cooling	10.0%	265.0				
											CI Non-Lavatory/Kitchen Faucets	10.0%	96.8				
											INST Non-Lavatory/Kitchen Faucets	10.0%	161.2				
											Targets						
											Target Method:	Percentage					
											% of Accts Targeted / yr	0.125%					
											Only Effects New Accts	☐					
											End Uses						
												SF	MF	CI	INST	LS	OTH
											Toilets						
											Urinals						
											Lavatory Faucets						
											Showers						
											Dishwashers						
											Clothes Washers						
											Process						
											Kitchen Spray Rinse						
											Internal Leakage						
											Baths						
											Other						
											Irrigation						
											Pools						
											Wash Down						
											Cooling						
											Car Washing						
											External Leakage						
											Outdoor Other						
											Non-Lavatory/Kitchen Faucets						
											Comments						
											>Utility Cost: Assumes average of \$750 per account for eligible rebates.						
											>Customer Cost: Remaining cost of devices not covered by rebate, assuming \$250 per account on average.						
											>Admin Cost: Assumes 15% markup for staff time to process rebates.						
											>End Use Savings: Since fixture upgrades will vary by account, conservatively estimating 10% savings on all end uses on average. Assumes savings are on applicable fixtures only - additional CII end uses are targeted in measures 15 and 16.						
											>Targets: approximately 10-20 customers annually.						
											Costs						
											View:	Summary					
	Utility	Customer	Total								View:	Accounts					
2025	\$8,596	\$2,492	\$11,088	2025	CI	INST	Total										
2026	\$8,629	\$2,501	\$11,131	2026	9	1	10										
2027	\$8,663	\$2,511	\$11,174	2027	9	1	10										
2028	\$8,696	\$2,521	\$11,217	2028	9	1	10										
2029	\$8,730	\$2,530	\$11,260	2029	9	1	10										
2030	\$8,763	\$2,540	\$11,303	2030	9	1	10										
2031	\$8,797	\$2,550	\$11,346	2031	9	1	10										
2032	\$8,830	\$2,559	\$11,389	2032	9	1	10										
2033	\$8,863	\$2,569	\$11,433	2033	9	1	10										
2034	\$8,897	\$2,579	\$11,476	2034	9	1	10										
2035	\$8,930	\$2,589	\$11,519	2035	9	1	10										
											Water Savings						
											Units	mgd					
											Total Savings (mgd)						
											2025	0.000839					
											2026	0.001679					
											2027	0.002519					
											2028	0.003360					
											2029	0.004202					
											2030	0.005045					
											2031	0.005889					
											2032	0.006734					
											2033	0.007580					
											2034	0.008428					
											2035	0.009278					

Measure #18 – Install High Efficiency Fixtures in MF & CII Buildings

Overview						
Install High Efficiency Fixtures in MF & CII Buildings						
Name	MF & CII Buildings					
Abbr	18					
Category	Default					
Measure Type	Standard Measure					
Time Period		Measure Life				
First Year	2035	Permanent	☐			
Last Year	2055	Years	12			
Measure Length	21	Repeat	☐			
Fixture Cost per Device						
	Utility	Customer	Fix/Acct			
MF	\$4,765.00	\$0.00	1			
CI	\$3,672.00	\$2,448.00	1			
INST	\$3,672.00	\$2,448.00	1			
Administration Costs						
Method:	Percent					
Markup Percentage		10%				
Description						
This measure would install high efficiency fixtures in select multifamily, commercial, and institutional buildings. Replacements would include high efficiency toilets, showerheads, urinals, and faucet aerators. A water survey would be conducted as a pre-requisite to qualifying for direct installation of fixtures. This measure aligns with CII BMPs for compliance with the Urban Water Use Objective from the "Making Conservation a California Way of Life" regulation.						
Customer Classes						
	Sh	MF	CI	INST	LS	OTH
	☐	☒	☒	☒	☐	☐
End Uses						
	Sh	MF	CI	INST	LS	OTH
Toilets	☒	☒	☒	☒	☐	☐
Urinals	☐	☒	☒	☐	☐	☐
Lavatory Faucets	☐	☒	☒	☐	☐	☐
Showers	☒	☒	☐	☐	☐	☐
Dishwashers	☐	☐	☐	☐	☐	☐
Clothes Washers	☐	☐	☐	☐	☐	☐
Process	☐	☐	☐	☐	☐	☐
Kitchen Spray Rinse	☐	☐	☐	☐	☐	☐
Internal Leakage	☒	☒	☒	☐	☐	☐
Baths	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐
Irrigation	☐	☐	☐	☐	☐	☐
Pools	☐	☐	☐	☐	☐	☐
Wash Down	☐	☐	☐	☐	☐	☐
Cooling	☐	☐	☐	☐	☐	☐
Car Washing	☐	☐	☐	☐	☐	☐
External Leakage	☐	☐	☐	☐	☐	☐
Outdoor Other	☐	☐	☐	☐	☐	☐
Non-Lavatory/Kitchen Faucets	☒	☒	☒	☐	☐	☐
Comments						
> Target the remaining low efficiency fixtures where possible. >Utility Cost: Cost assumes to following fixtures are purchased and installed, on average: -MF buildings: 9 toilets, 9 showerheads, 9 lavatory faucets and 8 kitchen faucets. -CI & INST buildings: 10 toilets, 3 urinals, 10 lavatory faucets, and 4 kitchen faucets. -Assumed avg cost per fixture (Incl. installation): toilets - \$500, urinals - \$350, showerheads- \$20, aerators- \$5. -assumes 40% of cost is for installation (removed for CI & INST) >Customer Cost: Assumes no cost to MF customers as modeling this as a direct install program for low-income MF customers. However, for CI and government buildings the installation would be the building owner's responsibility, so assuming 40% of the cost. >Admin Cost: Assumes a 10% markup for staff time to administer the program. >End Use Savings: Assumes the following upgrades: Toilets - from 2.5 to 0.8 gpf (68%) - avg of 3.5 and 1.6 gpf toilets Urinals - from 2.0 to 1.0 gpf (50%) Showerheads - from 2.5 to 1.5 gpm (50%) Lav faucets - from 2.2 to 1.2 gpm (45%) Kitchen faucets - from 2.2 to 1.5 gpm (32%) Leaks - assumes leaks would be addressed from replacement with upgraded fixtures. >Target: Targeting the remaining high use fixture sites, approx. 50 customers annually, targeting majority of MF accounts to help meet the indoor residential UWUO.						
Results						
Units	MG					
Average Water Savings (mgd)						
0.093740						
Lifetime Savings - Present Value (\$)						
Utility	\$837,909					
Community	\$4,901,022					
Lifetime Costs - Present Value (\$)						
Utility	\$4,151,922					
Community	\$4,429,674					
Benefit to Cost Ratio						
Utility	0.20					
Community	1.11					
Cost of Savings per Unit Volume (\$/mg)						
Utility	\$3,912					
End Use Savings Per Replacement						
Method:	Percent					
	% Savings/Acct	Avg gpd/acct				
MF Toilets	68.0%	155.9				
CI Toilets	68.0%	152.7				
INST Toilets	68.0%	302.3				
CI Urinals	50.0%	30.2				
INST Urinals	50.0%	60.5				
MF Lavatory Faucets	45.0%	37.1				
CI Lavatory Faucets	45.0%	33.3				
INST Lavatory Faucets	45.0%	60.5				
MF Showers	50.0%	185.6				
MF Internal Leakage	90.0%	129.9				
CI Internal Leakage	90.0%	151.2				
INST Internal Leakage	90.0%	201.5				
MF Non-Lavatory/Kitchen Faucets	32.0%	111.4				
CI Non-Lavatory/Kitchen Faucets	32.0%	96.8				
INST Non-Lavatory/Kitchen Faucets	32.0%	161.2				
Targets						
Target Method:	Detailed					
Enter Annual Targets Below						
Costs						
View:	Utility Details					
	Fixture Costs	Admin Costs	Util Total			
2025	\$0	\$0	\$0			
2026	\$0	\$0	\$0			
2027	\$0	\$0	\$0			
2028	\$0	\$0	\$0			
2029	\$0	\$0	\$0			
2030	\$0	\$0	\$0			
2031	\$0	\$0	\$0			
2032	\$0	\$0	\$0			
2033	\$0	\$0	\$0			
2034	\$0	\$0	\$0			
2035	\$230.094	\$23.009	\$253.103			
Targets						
View	Accounts					
	MF	CI	INST	Total		
2025	0	0	0	0		
2026	0	0	0	0		
2027	0	0	0	0		
2028						

Measure #19 – Enhanced – Residential Smart Landscape Rebates

[illegible]

Measure #20 – Commercial and Large Landscape Non-Functional Turf Outreach

Overview						
Commercial and Large Landscape Non Functional Turf Outreach						
Name						
Abbr	20					
Category	Default					
Measure Type	Standard Measure					
Time Period		Measure Life				
First Year	2025	Permanent	☒			
Last Year	2028					
Measure Length	4					
Fixture Cost per Device						
Utility	Customer	Fix/Acct				
CI	\$250.00	\$10,000.00	1			
INST	\$250.00	\$10,000.00	1			
LS	\$250.00	\$20,000.00	1			
Administration Costs						
Method:	Percent					
Markup Percentage	20%					
Description						
In October 2023, the California State Legislature passed Assembly Bill 1572, which phases in a permanent ban on watering decorative grass or non-functional turf with potable water in commercial, industrial, and institutional settings. This includes areas within homeowners associations (HOAs). The ban does not apply to residential lawns, school fields, sports fields, or areas that are regularly used for civic or community events. This measure reflects the City conducting enforcement according to the implementation timeline required per the regulation which occurs in phases, completing in January 2029. The City would also partner with the Environmental Council of Sacramento to improve outreach and communication with landscape contractors and maintenance personnel to increase awareness of the regulation and providethem with resources and training. > Note: MF irrigation assumed to be captured in COM (as part of HOAs).						
Customer Classes						
	5	MF	CI	INST	LS	OTH
	☐	☐	☒	☒	☒	☐
End Uses						
	SF	MF	CI	INST	LS	OTH
Toilets						
Urinals						
Lavatory Faucets						
Showers						
Dishwashers						
Clothes Washers						
Process						
Kitchen Spray Rinse						
Internal Leakage						
Baths						
Other						
Irrigation			☒	☒	☒	
Pools						
Wash Down						
Cooling						
Car Washing						
External Leakage			☒	☒	☒	
Outdoor Other						
Non-Lavatory/Kitchen Faucets						
Comments						
>Utility Cost: This measure does NOT include an incentive, as it is a requirement for all CII and large landscape accounts with NFT. Assume costs incurred are for inspections for compliance and other material requirements to ensure compliance. Assumes approximately five hour of staff time is required to identify customers who are not in compliance and inspect for compliance (per customer) at the fully burdened WC Representatives rate of \$46.50/hr. >Customer Cost: Assuming that customers incur the total cost for turf conversions, the average cost per account is estimated to be \$10,000. This average takes into account that some customers might participate in the City's program or in regional rebate programs, which may lower the average customer's cost slightly. Assume costs for LS customers are slightly higher since it is assumed that landscapes for these customers are larger. >Admin Cost: Assume 20% mark-up for administration of this measure. >Savings: Savings conservatively assumes 33% savings (1/3 of entire irrigated area) - 1/3 of a 5000 square foot landscape that would save 77,000 gallons annually based on 35% turf grass remaining. Could increase to assume 50% irrigation water savings with turf removal only. Assumes not all landscape is turf, therefore not all landscape is removed. Conservatively assumes 5% external leakage savings for assumption that irrigation equipment is updated/corrected during the landscape transformation. >Targets: Assumes 10% of CII & LS accounts are targeted annually over the next four years (until NFT compliance dates). Compliance must be in effect on the following dates: State buildings & local government agency properties - January 2027. CII properties - January 2028. HOA common areas - January 2029. The City could verify the target by analyzing the LAM data for an estimate on						
Results						
Units	MG					
Average Water Savings (mgd)						
1.175192						
Lifetime Savings - Present Value (\$)						
Utility	\$11,411,771					
Community	\$11,411,771					
Lifetime Costs - Present Value (\$)						
Utility	\$1,134,316					
Community	\$45,273,541					
Benefit to Cost Ratio						
Utility	10.06					
Community	0.25					
Cost of Savings per Unit Volume (\$/mg)						
Utility	\$85					
End Use Savings Per Replacement						
Method:	Percent					
	% Savings/Acct	Avg gpd/acct				
CI Irrigation	33.0%	426.8				
INST Irrigation	33.0%	2,119.6				
LS Irrigation	33.0%	2,669.9				
CI External Leakage	5.0%	28.5				
INST External Leakage	5.0%	132.5				
LS External Leakage	5.0%	140.5				
Targets						
Target Method:	Percentage					
% of Accts Targeted / yr	10.000%					
Only Effects New Accts	☐					
Costs						
View:	Summary					
	Utility	Customer	Total			
2025	\$286,254	\$11,110,469	\$11,396,723			
2026	\$288,061	\$11,199,938	\$11,487,999			
2027	\$289,868	\$11,289,407	\$11,579,275			
2028	\$291,675	\$11,378,876	\$11,670,551			
2029	\$0	\$0	\$0			
2030	\$0	\$0	\$0			
2031	\$0	\$0	\$0			
2032	\$0	\$0	\$0			
2033	\$0	\$0	\$0			
2034	\$0	\$0	\$0			
2035	\$0	\$0	\$0			
Targets						
View	Accounts					
	CI	INST	LS	Total		
2025	706	91	157	954		
2026	709	91	160	960		
2027	712	92	163	966		
2028	715	92	166	972		
2029	0	0	0	0		
2030	0	0	0	0		
2031	0	0	0	0		
2032	0	0	0	0		
2033	0	0	0	0		
2034	0	0	0	0		
2035	0	0	0	0		
Water Savings						
Units	mgd					
	Total Savings (mgd)					
2025	0.304148					
2026	0.611444					
2027	0.921889					
2028	1.235481					
2029	1.235481					
2030	1.235481					
2031	1.235481					
2032	1.235481					
2033	1.235481					
2034	1.235481					
2035	1.235481					

Measure #21 – Enhanced – Residential Leak Repair Assistance

Overview				Customer Classes							Results				
Name	Enhanced - Residential Leak Repair Assistance										Units	MG			
Abbr	21										Average Water Savings (mgd)				
Category	Default										0.097093				
Measure Type	Standard Measure										Lifetime Savings - Present Value (\$)				
											Utility		\$917,224		
											Community		\$3,912,336		
											Lifetime Costs - Present Value (\$)				
											Utility		\$5,183,344		
											Community		\$23,963,578		
											Benefit to Cost Ratio				
											Utility		0.18		
											Community		0.16		
											Cost of Savings per Unit Volume (\$/mg)				
											Utility		\$4,715		
											End Use Savings Per Replacement				
											Method:		Percent		
													% Savings/Acct	Avg gpd/acct	
											SF Internal Leakage		330.0%	25.3	
											MF Internal Leakage		330.0%	129.9	
											SF External Leakage		330.0%	8.1	
											MF External Leakage		330.0%	24.4	
											Targets				
											Target Method:		Percentage		
											% of Accts Targeted / yr		0.100%		
											Only Effects New Accts		☐		
											Comments				
											>This measure is offered for customers that do not qualify for Leak Free Sacramento. >Utility Cost: Assumes the City provides \$1,000 rebates on average to subsidize repairs. >Customer Cost: Repairs are typically costly, assuming up to \$10,000 total and average of \$6,000. >Admin Cost: Assumes 50% of 1 Specialist's time is spent administering this measure, or ~\$54,320 annually. This equates to ~\$380/participant. >End Use Savings: Savings might be over 200% if based on a targeted account's using 2-4 times the amount of the previous year's water use. Assume targeting high leak accounts. Assume 1 leak per SF, 2 leaks per MF (typically duplex owners), as these programs typically are for owner-occupied residences. source: AWE 2023 Leak Alert Study https://www.allianceforwaterefficiency.org/resources/to-pic/evaluation-ami-enabled-proactive-leak-notification-programs Savings updated to 330% based on City of Sacramento participation data. >Targets: Assumes grant funding increases the budget, so can target approx. 150 annually.				
											Costs				
											View:		Utility Details		
											Fixture Costs		Admin Costs	Util Total	
											2025		\$0	\$0	\$0
											2026		\$0	\$0	\$0
											2027		\$0	\$0	\$0
											2028		\$153,038	\$58,155	\$211,193
											2029		\$155,035	\$58,913	\$213,949
											2030		\$157,032	\$59,672	\$216,704
											2031		\$159,029	\$60,431	\$219,460
											2032		\$161,026	\$61,190	\$222,216
											2033		\$163,023	\$61,949	\$224,972
											2034		\$165,021	\$62,708	\$227,728
											2035		\$167,018	\$63,467	\$230,484
											Targets				
											View:		Accounts		
											SF		MF	Total	
											2025		0	0	0
											2026		0	0	0
											2027		0	0	0
											2028		131	11	142
											2029		133	11	144
											2030		134	11	146
											2031		136	12	147
											2032		137	12	149
											2033		139	12	151
											2034		140	12	153
											2035		142	13	154
											Water Savings				
											Units		mgd		
											Total Savings (mgd)				
											2025		0.000000		
											2026		0.000000		
											2027		0.000000		
											2028		0.020061		
											2029		0.040411		
											2030		0.061050		
											2031		0.081978		
											2032		0.103194		
											2033		0.104639		
											2034		0.106084		
											2035		0.107529		

Measure #22 – Enhanced – AMI Targeted Leak Free Sacramento

Overview			
Name	Enhanced - AMI Targeted Leak Free Sacramento		
Abbr	22		
Category	Default		
Measure Type	Standard Measure		
Time Period			
First Year	2025		
Last Year	2055		
Measure Length	31		
Measure Life			
Permanent	☐		
Years	5		
Repeat	☐		
Fixture Cost per Device			
	Utility	Customer	Fix/Acct
SF	\$5,000.00	\$0.00	1
MF	\$5,000.00	\$0.00	1
Administration Costs			
Method:	Fixed		
Annual Admin Costs	\$81,500		
Description			
Customer leaks can go uncorrected at properties where owners are least able to pay costs of repair. This measure provides free leak repairs to eligible low-income single family and multi-family homeowners. Accounts with leak alerts identified via AMI would be targeted, especially large MF customers. This measure aligns with the Water Loss Performance Standards for compliance with the Urban Water Use Objective from the "Making Conservation a California Way of Life" regulation.			
Customer Classes			
	SF	MF	CI
	☒	☒	☐
	INST	LS	OTH
	☐	☐	☐
End Uses			
	SF	MF	CI
	☐	☐	☐
Toilets	☐	☐	☐
Urinals	☐	☐	☐
Lavatory Faucets	☐	☐	☐
Showers	☐	☐	☐
Dishwashers	☐	☐	☐
Clothes Washers	☐	☐	☐
Process	☐	☐	☐
Kitchen Spray Rinse	☐	☐	☐
Internal Leakage	☒	☒	☐
Baths	☐	☐	☐
Other	☐	☐	☐
Irrigation	☐	☐	☐
Pools	☐	☐	☐
Wash Down	☐	☐	☐
Cooling	☐	☐	☐
Car Washing	☐	☐	☐
External Leakage	☒	☒	☐
Outdoor Other	☐	☐	☐
Non-Lavatory/Kitchen Faucets	☐	☐	☐
Comments			
>Assumes that this is a grant funded program. >Eligibility for multi-family homeowners could be determined by those that live in a duplex/triplex/fourplex or multi-plex within a DAC area. >Utility Cost: Assume average of \$5,000 to pay a plumber to fix a main line leak (City of Sacramento provides plumber - discounted rate). >Customer Cost: No cost to customer. This is an income-qualified measure. >Admin Cost: Assumes .75 FTE at Specialist rate to administer this measure (approx. \$81,500 burdened). >End Use Savings: Savings would be above 100% of the average account's use on indoor leaks since providing direct support to high using customers. Per City of Sacramento analyzed data, participants saved 100 gpd/account on average on indoor leaks, so increased savings to 400%. >Targets: Assume non-enhanced targets till end of 2027 when budget can be adjusted. Then target 250 leaks per year.			
Results			
Units	MG		
Average Water Savings (mgd)			
0.223800			
Lifetime Savings - Present Value (\$)			
Utility	\$2,103,636		
Community	\$8,973,781		
Lifetime Costs - Present Value (\$)			
Utility	\$37,232,018		
Community	\$37,232,018		
Benefit to Cost Ratio			
Utility	0.06		
Community	0.24		
Cost of Savings per Unit Volume (\$/mg)			
Utility	\$14,693		
End Use Savings Per Replacement			
Method:	Percent		
	% Savings/Acct	Avg gpd/acct	
SF Internal Leakage	400.0%	25.3	
MF Internal Leakage	400.0%	129.9	
SF External Leakage	400.0%	8.1	
MF External Leakage	400.0%	24.4	
Targets			
Target Method:	Detailed		
Enter Annual Targets Below			
Costs			
View:	Summary		
	Utility	Customer	Total
2025	\$320,800	\$0	\$320,800
2026	\$323,878	\$0	\$323,878
2027	\$326,956	\$0	\$326,956
2028	\$1,324,171	\$0	\$1,324,171
2029	\$1,339,561	\$0	\$1,339,561
2030	\$1,354,951	\$0	\$1,354,951
2031	\$1,370,343	\$0	\$1,370,343
2032	\$1,385,735	\$0	\$1,385,735
2033	\$1,401,127	\$0	\$1,401,127
2034	\$1,416,520	\$0	\$1,416,520
2035	\$1,431,912	\$0	\$1,431,912
Targets			
View	Accounts		
	SF	MF	Total
2025	44	4	48
2026	45	4	48
2027	45	4	49
2028	229	19	249
2029	232	20	252
2030	235	20	255
2031	237	21	258
2032	240	21	261
2033	243	21	264
2034	245	22	267
2035	248	22	270
Water Savings			
Units	mgd		
	Total Savings (mgd)		
2025	0.008143		
2026	0.016409		
2027	0.024797		
2028	0.067350		
2029	0.110517		
2030	0.146153		
2031	0.182280		
2032	0.218897		
2033	0.221962		
2034	0.225027		
2035	0.228092		

Measure #23 – Enhanced – Water & Energy Partnership Rebates

Overview						
Enhanced - Water & Energy						
Name	Partnership Rebates					
Abbr	23					
Category	Default					
Measure Type	Standard Measure					
Time Period		Measure Life				
First Year	2030	Permanent	☐			
Last Year	2054	Years	15			
Measure Length	25	Repeat	☐			
Fixture Cost per Device						
	Utility	Customer	Fix/Acct			
SF	\$190.00	\$260.00	1			
MF	\$190.00	\$260.00	1			
Administration Costs						
Method:	Percent					
Markup Percentage	10%					
Description						
Continue partnership with SMUD to offer incentives to customers to save both water and energy. The focus of this measure is peak demand reduction. Consider partnering with SMUD on their shade-tree program to cross-market with the landscape transformation program.						
Customer Classes						
	SF	MF	CI	INST	LS	OTH
	☒	☒	☐	☐	☐	☐
End Uses						
	SF	MF	CI	INST	LS	OTH
Toilets	☐	☐	☐	☐	☐	☐
Urinals	☐	☐	☐	☐	☐	☐
Lavatory Faucets	☒	☒	☐	☐	☐	☐
Showers	☒	☒	☐	☐	☐	☐
Dishwashers	☐	☐	☐	☐	☐	☐
Clothes Washers	☒	☒	☐	☐	☐	☐
Process	☐	☐	☐	☐	☐	☐
Kitchen Spray Rinse	☐	☐	☐	☐	☐	☐
Internal Leakage	☐	☐	☐	☐	☐	☐
Baths	☐	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐	☐
Irrigation	☒	☒	☐	☐	☐	☐
Pools	☐	☐	☐	☐	☐	☐
Wash Down	☐	☐	☐	☐	☐	☐
Cooling	☐	☐	☐	☐	☐	☐
Car Washing	☐	☐	☐	☐	☐	☐
External Leakage	☒	☒	☐	☐	☐	☐
Outdoor Other	☐	☐	☐	☐	☐	☐
Non-Lavatory/Kitchen Faucets	☒	☒	☐	☐	☐	☐
Comments						
>City of Sacramento provides an instant rebate for smart controllers from the SMUD energy store, along with rebates for include showerheads, aerators, and drip kits. Expand the offerings provided to include clothes washers, and include a required online water audit to receive a rebate. >Utility cost: Cost of rebates and giveaways: controllers - \$125, showerhead & aerator kits-\$10, \$250 - clothes washers. Assumes most participants apply for one of either a controller or clothes washer, thus average rebate is ~\$190. >Customer cost: Remaining cost of smart controller (Rachio), showerhead/aerator kit, and clothes washer. Assumes controllers are \$200, showerhead/aerator kits are \$15, and clothes washers are \$700. >Admin cost: Assumes 10% admin markup to coordinate this measure with SMUD - website already exists. >End use savings: Savings assume the following fixtures are replaced: 2.5 gpm showerhead with a 1.5 gpm showerhead and 2.2 gpm lavatory and non-lavatory faucet aerators with 1.5 gpm kitchen faucet aerators and 1.2 gpm lavatory faucet aerators. (divided by 10 assuming 1 out of 10 applicants applies). -Estimating approximately 50% water savings for switching from a low or medium efficiency washer to an ultra high efficiency washer, based on the difference in integrated water factors. Assumes 1 out of 2 applicants applies for a controller - average of 25% savings per account. -Per EPA, savings can range from 20-50% for installation of smart controllers; assumes 1 out of 2 applicants applies for a controller- average of 25% savings per account. >Targets: Per recent past participation (FY 23 - FY 24), about 560 smart controller rebates are distributed						
Results						
Units	MG					
Average Water Savings (mgd)						
0.231934						
Lifetime Savings - Present Value (\$)						
Utility	\$2,108,085					
Community	\$7,953,212					
Lifetime Costs - Present Value (\$)						
Utility	\$2,778,581					
Community	\$6,235,189					
Benefit to Cost Ratio						
Utility	0.76					
Community	1.28					
Cost of Savings per Unit Volume (\$/mg)						
Utility	\$1,058					
End Use Savings Per Replacement						
Method:	Percent					
	% Savings/Acct	Avg gpd/acc				
SF Lavatory Faucets	4.5%	7.2				
MF Lavatory Faucets	4.5%	37.1				
SF Showers	4.0%	39.7				
MF Showers	4.0%	185.6				
SF Clothes Washers	25.0%	28.9				
MF Clothes Washers	25.0%	185.6				
SF Irrigation	25.0%	96.5				
MF Irrigation	25.0%	289.6				
SF External Leakage	25.0%	8.1				
MF External Leakage	25.0%	24.4				
SF Non-Lavatory/Kitchen Faucets	3.0%	25.3				
MF Non-Lavatory/Kitchen Faucets	3.0%	111.4				
Targets						
Target Method:	Percentage					
	% of Accts Targeted / yr	0.380%				
	Only Effects New Accts	☐				
Costs						
View:	Summary					
	Utility	Customer	Total			
2025	\$0	\$0	\$0			
2026	\$0	\$0	\$0			
2027	\$0	\$0	\$0			
2028	\$0	\$0	\$0			
2029	\$0	\$0	\$0			
2030	\$115,586	\$143,791	\$259,376			
2031	\$116,983	\$145,529	\$262,512			
2032	\$118,380	\$147,267	\$265,647			
2033	\$119,777	\$149,005	\$268,782			
2034	\$121,174	\$150,743	\$271,917			
2035	\$122,571	\$152,481	\$275,052			
Targets						
View	Accounts					
	SF	MF	Total			
2025	0	0	0			
2026	0	0	0			
2027	0	0	0			
2028	0	0	0			
2029	0	0	0			
2030	509	44	553			
2031	515	45				

Measure #24 – Enhanced – Residential Water Surveys

Overview				Customer Classes							Results																																																																																																																																		
Enhanced - Residential Water Surveys				<table><tr><td></td><td>SF</td><td>MF</td><td>CI</td><td>INST</td><td>LS</td><td>OTH</td></tr><tr><td></td><td>☒</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td><td>☐</td></tr></table>								SF	MF	CI	INST	LS	OTH		☒	☐	☐	☐	☐	☐	Units MG																																																																																																																				
	SF	MF	CI								INST	LS	OTH																																																																																																																																
	☒	☐	☐								☐	☐	☐																																																																																																																																
Name											Average Water Savings (mgd)																																																																																																																																		
Abbr				0.035535																																																																																																																																									
Category				Lifetime Savings - Present Value (\$)																																																																																																																																									
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First Year				<table><tr><td>Utility</td><td>\$373,649</td></tr><tr><td>Community</td><td>\$511,884</td></tr></table>							Utility	\$373,649	Community	\$511,884																																																																																																																															
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Measure Length				<table><tr><td>Utility</td><td>0.88</td></tr><tr><td>Community</td><td>3.06</td></tr></table>							Utility	0.88	Community	3.06																																																																																																																															
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Method: Percent				>Utility Cost: Cost to conduct surveys in house and cost for giveaway items (showerheads, faucet aerators, and hose nozzles). Estimating 2 hours per customer to conduct SF survey and produce report; half the time per MF unit. Assumes fully burdened rate of WC Specialist is ~\$52/hr. Assumes survey kit materials cost \$10 per customer due to bulk orders.																																																																																																																																									
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Description				>Admin Cost: Estimated mark-up cost for administering measure, including follow up with customers.																																																																																																																																									
Provide comprehensive water surveys for existing single family and multifamily residential customers. Target those with high water use and provided a customized report to owner. Require a full survey as a pre-requisite for receiving rebates. Includes indoor and outdoor.				>Customer Cost: Cost to implement recommended water efficiency improvements. This will vary greatly, but estimating \$50 per SF customer and \$25 per MF customer on average.																																																																																																																																									
				>End Use Savings: Savings are generalized as end uses will vary based on what was identified during the survey, but assumes high users are targeted and therefore significant recommendations will be identified. However, as measure implementation is not guaranteed, savings are still relatively low. Assumes leaks will be discovered and addressed.																																																																																																																																									
				>Targets: Target residential customers that have high use via online notifications connected to AMI customer portal and analysis of both summer and wintertime use. Goal would be to reach approximately 100 customers per year. Consider conducting a raffle or providing e-gift cards to participants to increase engagement.																																																																																																																																									
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Measure #25 – Enhanced Water Loss Control Program

Overview		
Name	Enhanced Water Loss Control Program	
Abbr	25	
Category	Default	
Measure Type	Water Loss Measure	
Time Period		
First Year	2029	
Backlog Costs		
Total Backlog Work Costs	\$67,500,000	
Years to Complete Backlog	27	
Maintenance Costs		
Annual Maintenance Costs	\$2,500,000	
Target		
Total GPCD Reduction	10.0	

Description	
> Enhanced water loss efforts to find and repair leaks in the distribution system to reduce real water loss. This is currently funded by the City of Sacramento operations team and budget. > In addition, the City's water loss efforts include maintaining a thorough annual accounting of water production, sales by customer class and quantity of water produced but not sold (non-revenue water) as required by California SB-555. This provides a picture of the City's system, including water usage patterns and trends needed to identify appropriate conservation activities. > Operating budget per the 2023 validated water loss audit workbook was approx. \$121M. In this enhanced measure, adding approximately 2% to the budget to support another water loss crew that would be in the field conducting proactive leak detection and repair.	

Results	
Units	MG
Average Water Savings (mgd)	
3.376729	
Lifetime Savings - Present Value (\$)	
Utility	\$30,270,890
Community	\$30,270,890
Lifetime Costs - Present Value (\$)	
Utility	\$54,799,138
Community	\$54,799,138
Benefit to Cost Ratio	
Utility	0.55
Community	0.55
Cost of Savings per Unit Volume (\$/mg)	
Utility	\$1,433
Comments	
> Backlog Costs: Assume covered by operations. Assume \$2.5M per year through modeling period to achieve GPCD reduction target. > Maintenance Costs: Funding an additional 2% to the current operating budget to support another water loss crew that would be in the field conducting proactive leak detection and repair. (approx. \$2.5M annually) > Target: Assume significantly higher savings than original measure due to additional water loss mgmt. field crews.	

Costs		
	Utility	
2025	\$0	
2026	\$0	
2027	\$0	
2028	\$0	
2029	\$2,500,000	
2030	\$2,500,000	
2031	\$2,500,000	
2032	\$2,500,000	
2033	\$2,500,000	
2034	\$2,500,000	
2035	\$2,500,000	

Targets		
	Projected NRW Percent	
2025	14.5%	
2026	14.5%	
2027	14.5%	
2028	14.5%	
2029	14.3%	
2030	14.0%	
2031	13.8%	
2032	13.5%	
2033	13.3%	
2034	13.0%	
2035	12.8%	

Water Savings (MG/d)		
	Total Savings	
2025	0.000000	
2026	0.000000	
2027	0.000000	
2028	0.000000	
2029	0.211688	
2030	0.430904	
2031	0.657647	
2032	0.891918	
2033	1.133716	
2034	1.383043	
2035	1.639896	

Measure #26 – Enhanced – Commercial and Large Landscape Non-Functional Turf Incentive

Overview									
Name	Enhanced - Commercial and Large Landscape Non Functional Turf Incentive								
Abbr	26								
Category	Default								
Measure Type	Standard Measure								
Time Period		Measure Life							
First Year	2025	Permanent	☒						
Last Year	2028								
Measure Length	4								
Fixture Cost per Device									
	Utility	Customer	Fix/Acct						
CI	\$10,000.00	\$20,000.00	1						
INST	\$10,000.00	\$20,000.00	1						
LS	\$20,000.00	\$40,000.00	1						
Administration Costs									
Method:	Percent								
Markup Percentage		5%							
Description									
Target CII & Large Landscape accounts with non-functional turf (NFT) and provide an incentive and resources to assist with landscape retrofits, including water efficient landscape design and plant palette resources, smart irrigation practices guidance, and a rebate for replacing NFT with appropriate landscaping.									
Customer Classes									
	SE	MF	CI	INST	LS	OTH			
	☐	☐	☒	☒	☒	☐			
End Uses									
	SE	MF	CI	INST	LS	OTH			
Toilets			☐	☐					
Urinals			☐	☐					
Lavatory Faucets			☐	☐					
Showers			☐	☐					
Dishwashers			☐	☐					
Clothes Washers			☐	☐					
Process			☐	☐					
Kitchen Spray Rinse			☐	☐					
Internal Leakage			☐	☐					
Baths			☐	☐					
Other			☐	☐					
Irrigation			☒	☒	☒				
Pools			☐	☐					
Wash Down			☐	☐					
Cooling			☐	☐					
Car Washing			☐	☐					
External Leakage			☒	☒	☒				
Outdoor Other			☐	☐					
Non-Lavatory/Kitchen Faucets			☐	☐					
Comments									
>Utility Cost: Cost for a rebate of \$2/sq. ft.. Estimating 5,000 and 10,000 for CII & LS landscapes, respectively, on average. >Customer Cost: Cost of the landscape conversion minus the rebate amount. Estimating landscape retrofits average about \$6/. Customer costs per account will vary significantly based on landscape size. >Admin Cost: Assume 5% mark-up for administration of this measure, including staff time to prepare materials, identify target customers using GIS, and conduct outreach. >Savings: Industry assumptions are 20% savings for irrigation and 75% savings on outdoor leaks from installing water efficient landscaping and/or irrigation equipment. Sources for this value include: 2018 Landscape Rebate Water Savings Study from Valley Water and Southern Nevada Water Authority, 2024 Valley Water participation data. However, assuming double the savings from targeting high use accounts. >Targets: Assumes 2% of top using CII & LS accounts are targeted annually over the next four years (until NFT compliance dates). Compliance must be in effect on the following dates: State buildings & local government agency properties - January 2027. CII properties - January 2028. HOA common areas - January 2029.									
Costs				Targets				Water Savings	
View:	Utility Details			View	Accounts			Units	mgd
	Fixture Costs	Admin Costs	Util Total		CI	INST	LS	Total	Total Savings (mgd)
2025	\$2,222,094	\$111,105	\$2,333,199	2025	141	18	31	191	0.089340
2026	\$2,239,988	\$111,999	\$2,351,987	2026	142	18	32	192	0.179592
2027	\$2,257,881	\$112,894	\$2,370,775	2027	142	18	33	193	0.270757
2028	\$2,275,775	\$113,789	\$2,389,564	2028	143	18	33	194	0.362835
2029	\$0	\$0	\$0	2029	0	0	0	0	0.362835
2030	\$0	\$0	\$0	2030	0	0	0	0	0.362835
2031	\$0	\$0	\$0	2031	0	0	0	0	0.362835
2032	\$0	\$0	\$0	2032	0	0	0	0	0.362835
2033	\$0	\$0	\$0	2033	0	0	0	0	0.362835
2034	\$0	\$0	\$0	2034	0	0	0	0	0.362835
2035	\$0	\$0	\$0	2035	0	0	0	0	0.362835
Results									
Units	MG								
Average Water Savings (mgd)									
0.345131									
Lifetime Savings - Present Value (\$)									
Utility	\$3,351,423								
Community	\$3,351,423								
Lifetime Costs - Present Value (\$)									
Utility	\$9,269,237								
Community	\$26,924,927								
Benefit to Cost Ratio									
Utility	0.36								
Community	0.12								
Cost of Savings per Unit Volume (\$/mg)									
Utility	\$2,372								
End Use Savings Per Replacement									
Method:	Percent								
	% Savings/Acct	Avg gpd/acct							
CI Irrigation	40.0%	426.8							
INST Irrigation	40.0%	2,119.6							
LS Irrigation	40.0%	2,669.9							
CI External Leakage	150.0%	28.5							
INST External Leakage	150.0%	132.5							
LS External Leakage	150.0%	140.5							
Targets									
Target Method:	Percentage								
% of Accts Targeted / yr		2.000%							
Only Effects New Accts		☐							

Appendix D

Sacramento Water Forum Member Comments on Draft Plan Elements

From: Chris Brown <info@sacclimate.org>

Sent: Friday, May 30, 2025 4:37 PM

To: Michelle Maddaus <michelle@maddauswater.com>; William Granger <WGranger@cityofsacramento.org>; Brett Ewart <bewart@cityofsacramento.org>

Subject: Sierra Club comments of proposed changes to the city water conservation plan

William, Michele and Brett,

Thank you for meeting with me last Friday and for sharing the additional materials.

Here are some comments on behalf of the Sierra Club Motherlode Chapter.

The illustrations/questions about trees in a median strip with turf and raising the question of whether or not that was functional turf appears to be some level of confusion about what are turf water needs and trees' water needs and what the state law is intended to eliminate. For those median strips that include trees, the irrigation system should be changed to drip or bubbler systems. The turf can be replaced with low water use plants that also benefit from drip irrigation.

We think that all of the enhanced measures will likely result in some additional water savings. We especially like the Water Loss M25, and the mentions of partnerships in several of the measures.

The requirement that customers complete online water audits will most assuredly reduce participation, some for logistical issues of computer access, and some for concern about government collection of excessive amounts of data. That provision should be reconsidered.

We suggest adding to the program:

- More education on the benefits to plants of infrequent irrigation (deeper roots, and greater drought resiliency, and especially that mature trees need less frequent irrigation than other plants in landscape, especially turfgrass. While everyone can benefit from this, the most important audience are those who do not have automated irrigation systems. It is important from an environmental justice perspective not to focus only on those who can afford irrigation equipment.
- Implement a program to identify water users that are using excessive amounts of water (well above the mandated objectives) and do direct outreach to support those users in reducing excessive use through education and access to resources (i.e., rebates), as available.
- Develop landscape conversion educational materials and financial incentives to support climate ready landscapes with support of UC Davis Extension and Master Gardeners. This will have dual benefits of reducing urban heat island effects as well as reducing water consumption.
- Promote local native plants from the Sacramento area as they will require no additional water when established, and will provide important pollinator, insect and bird habitat, as well as maintain and beautify neighborhoods.
- Develop a high water use tier in the rate structure which is dedicated to paying for demand management measures. Design it so that those who use more than their "fair share" of the city's water budget target pay this tier. The logical nexus is that when all are using at or below their portion of the community wide target, there will be no need for the funding this tier generates.

We suggest adding a seat to the rate advisory committee for a member of the conservation advocacy community. As a standing committee the Rate Advisory Committee holds a lot of sway compared to community advocates who are only engaged when a rate proposal is made public.

We look forward to reviewing the draft water conservation plan when it is published later this year. We are pleased that the City continues to be a regional leader in water conservation efforts.

Chris Brown
Sierra Club Motherlode Chapter and Sacramento Climate Coalition



**CALIFORNIA NATIVE
PLANT SOCIETY**
Sacramento Valley Chapter

William Granger
Department of Utilities
Submitted via email to wgranger@cityofsacramento.org

May 30, 2025

RE: City of Sacramento Water Conservation Plan

Dear Mr. Granger,

The Environmental Council of Sacramento (ECOS) is a 501c3 non-profit corporation, a coalition of community-based organizations and individuals from throughout the Sacramento region that helps drive conversation and action for good planning.

California Native Plant Society (CNPS) is a non-profit environmental organization with more than 13,000 members in 36 Chapters across California and Baja California, Mexico. CNPS's mission is to protect California's native plants and their natural habitats, today and into the future, through science, education, stewardship, gardening, and advocacy. CNPS's mission is to protect California's native plants and their natural habitats, today and into the future, through science, education, stewardship, gardening, and advocacy. We work closely with decision-makers, scientists, and local planners to advocate for well-informed policies, regulations, and land management practices. CNPS supports science-based, rational policies and actions, on the local, state, national, and international levels, that lead to the continued study and enjoyment of the state's botanical resources.

The ECOS Water Committee and Sacramento Valley Chapter of CNPS thank you and the Department of Utilities for the development of a strong Water Conservation Plan. Your ongoing and future strategies help to make important water-saving infrastructure available to all City residents. We also thank you for conducting a public meeting at the Water Forum and allowing us to provide input on the Plan. Please see our comments below:

- The presentation and subsequent discussion of nonfunctional turf seemed to indicate that exceptions might be given to turf areas with tree plantings. It is well understood that turf irrigation needs are not the same as irrigation necessary for trees. Replacing turf with local native plants or other deep rooted, low-water plantings accomplishes the objectives of lowering water use and promoting both healthy trees and the built environment, while also

eliminating the recurrent need to water turf. The city should proceed to actively promote removal of turf and its replacement with local native plants in all of the examples shown in the presentation.

- The presentation and discussion indicated that the city might not be fully aware of all of the available information about local native plants including their planting, care and maintenance, and where local native plants can be obtained. The Sacramento Valley Chapter of CNPS has a wealth of information on these topics. CNPS can provide extensive information on the local trees and shrubs that most benefit local insects, birds, and animals, as well as tried and tested experience regarding drought tolerance and maintenance needs for these plant species. Use of these native plants could provide plant selections numerous ecological benefits including habitat value, low maintenance needs, and carbon sequestration in addition to water conservation. The attached table provides information on locally native trees and shrubs that should be included on any preferred plant list the City uses as part of its landscape replacement program. CNPS has an additional plant list that has been developed with the input from local representatives of The Xerces Society for Invertebrate Conservation and The National Audubon Society which provides additional information on key local native plants that support our local ecology. CNPS's state organization has developed training programs for landscape professionals, landscape contractors and maintenance personnel. CNPS stands ready to meet with the City to discuss how it can assist in the City's efforts to implement the Water Conservation Plan especially with regard to turf and landscape conversion to local native plant landscapes. CNPS has been working to improve the supply of local native plants and would like to develop a partnership with water agencies and local landscape suppliers to increase the availability of these plants.
- The implementation of conservation programs aimed at reducing low-income customer landscape costs is important to CNPS. Much of the focus on landscape conversion has been on more affluent customers owing to the fact they have the resources to participate in rebate and incentive programs. CNPS would like to initiate discussions with the City to explore possible joint program efforts that can result in low-income single family and multifamily properties being able to benefit from a low water use, more affordable local native plant landscape.
- The discussion of landscape conversion also highlighted some difficulties in reaching landscape contractors and maintenance personnel to provide them with notice of City effort changes, informational resources, and training on effective conversion and maintenance practices for low water-use landscaping. We believe that a small grant or City-led focus group project with active landscape contractors and maintenance professionals would help to identify how to best communicate with such contractors and engage them in the City's landscape efficiency and replacement efforts. We would be pleased to participate with the City in the development of this type of outreach effort.
- The plan presentation included a discussion of the Utility Rate Advisory Commission and the role it will play in designing rates that both pay for the Conservation Program and help promote water conservation. ECOS is interested in learning more about the affiliations and populations

represented by the Advisory Commission and recommends that the Commission include representation of low-income and Disadvantaged Communities (DAC's), particularly for discussions of water rate setting.

- Concerns were raised regarding the burden that fixed rate costs may place on lower-income water users. The fact that there are common service needs that require higher water use-capable infrastructure (e.g., fire protection; standardized development requirements) was offered as part of the explanation for fixed components of all water customer rates. While understandable, we believe that further discussion of this issue is important to our understanding of how utility rates are established. With residential metering, State guidance on water use budgeting, and the wealth of experience the City staff have, it may be possible to assess fixed and variable water service costs in the most equitable fashion practicable. We would like to continue this discussion with the City.
- The Plan presented was short on details regarding what constitutes enhanced and augmented programs. We look forward to receiving more information on these program levels.

Thank you for your consideration. We hope to continue working with you through the implementation of the water conservation programs outlined in your Plan. Please contact us at the emails listed below for further discussion and collaboration on future programs.

Sincerely,

Ted Rauh
Chair of ECOS Water
Committee
tnrauh@att.net

Lesley Hamamoto
President of the California Native Plant
Society, Sacramento Valley Chapter
president@sacvalleyCNPS.org

Luz Lim
Policy Analyst of ECOS
and Habitat 2020
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Appendix E Comments on the Draft City of Sacramento's Water Efficiency and Conservation Plan by Sierra Club representative to the Water Forum, received 2/23/26

Location	Comment	DOU Response to Comments
Page 11 Plan Objectives	Recommend including a conservation committee made up of community-based organizations, businesses, and water conservation advocacy organizations. These kinds of bodies have been shown to increase public support for water conservation and contribute to a creative culture of stewardship of water. Sacramento Water Utility had such a committee a number of years ago. This could be simply stated: Maintain a Community Conservation committee for regular input on the ongoing and future water conservation efforts.	The City will be communicating with outside entities and organizations as needed as they implement and refine the program. A standing committee was used in the past and it was determined that having short term task forces on specific topics were more effective for program refinement than a committee. The City will communicate with different groups which may include landscapers, property managers, leak experts or item needed, as different individuals or organizations would be best suited to provide the needed information or feedback.
Page 15 Re: the sentence "At the direction of the City, water demand projections developed in the 2023 Water Supply Master Plan (WSMP) matching consistency in demand projections,"	How did that make a difference in the results of the demand projections?	This comment was reviewed and the City used the forecast as a starting point for this project so that we were consistent with other previously reviewed and approved City planning efforts. The demand projections were from the 2023 Water Supply Master Plan as stated.
Page 30 Environmental Impacts "turf replacement programs may contribute to the heat island effect where areas with little to no landscaping suffer from increased temperatures."	Studies in the Sacramento region have shown that turf replacement which replaces turf with living low water use shrubs will reduce temperatures, not increase them. Proper program design can ensure that rebates are only offered for low water landscape plants, and public education can reinforce this point.	As noted on page 30, it does say that it "depends upon the required design elements." A sentence has been added to the report was added to clarify the current City Program. To help reduce any possible impacts, the existing City program requires replacing turfgrass with a living, water wise landscape that will cover at least a 60 percent of the former turf area.
Page 30 4.2.1 Environmental Impact: Program has environmental co-benefits. • 0 = Neutral environmental impact (i.e., allowing artificial turf to qualify for a landscape turf replacement program) text.	Allowing artificial turf should be a negative score for the environmental harms listed in the paragraph above it in the text. General comment on Scoring system: It is clear, and easy to understand, and except for the comment above I think this is a keeper.	The City reviewed this comment and has made a change to the table to state that Artificial Turf does have a negative impact on the environment and is also against the overall City goals. The text has been adjusted to remove artificial turf as an example.
Page 38 Section 4.3	What is a BCR?	BCR stands for Benefit Cost Ratio. A definition has been added on page 4 (Abbreviations and Acronyms) and on page 29 when first introducing the Utility Benefit to Cost Ratio.
Page 41-42 The elbows in the two graphs (figures 4.12 and 4.13) don't appear to have an explanation in that section.	What is the reason for the projected increase in water demands in ~2045?	It is explained near the top of page 41: "The increase in demand in 2045 is due to baseline demands aligning with the 2023 WSMP and 2020 UWMP demands per the City's direction for consistency between planning efforts." A sentence was added to explain the start year of 2017 was the first year that was not a declared water shortage.
Page 48 Graphs 5-7 and 5-8 are illustrative of the power of AMI on a very limited experience according to the text.	A more representative example would be a sample of the customers who have qualified for landscape conversion or irrigation rebates, and their before and after water use data. Recommend to include such an example.	The City has started to analyze data using AMI and published what has been done at this time. The City intends to hire a data analyst in the future to continue to analyze AMI data to inform customer programs.

Appendix D – DWR Checklist

Retail (x = required)	Wholesale (x = required)	Order	2025 Guidebook Location	Water Code Section	Summary as Applies to UWMP	Subject	Relevant Submittal Table	2025 UWMP Location
x	x	1	Chapter 1	10615	A plan shall describe and evaluate sources of supply, reasonable and practical efficient uses, reclamation and demand management activities.	Introduction and overview	n/a	Sections 3.1 through 3.4, Section 4.1 through 4.2, Section 7.1 through 7.4
x	x	1	Chapter 1	10630.5	Each plan shall include a simple description of the Supplier's plan including water availability, future requirements, a strategy for meeting needs, and other pertinent information. Additionally, a Supplier may also choose to include a simple description at the beginning of each chapter.	Plan preparation	n/a	Executive Summary
x	x	2.1	Section 2.1	10620(b)	Every person that becomes a Supplier shall adopt UWMP within one year after it has become a Supplier.	Plan preparation	n/a	Section 1.2
x	n/a	2.5	Section 2.5	10644	Supplier shall report the Public Water Systems number, volume of delivered water, and number of connections that are included in this UWMP.	Plan preparation	2-1	Table 1-1, Section 4.1.2
x	x	2.5	Section 2.5	10644	Supplier shall report if this UWMP is an Individual UWMP and whether the Supplier belongs to a regional UWMP or regional alliance.	Plan preparation	2-2	Note to DWR
x	x	2.5	Section 2.5	10644	Supplier shall report whether the data is in fiscal or calendar years and the units of measure used for reporting water volumes.	Plan preparation	2-3	See tables
x	x	2.4	Section 2.4	10642	Provide supporting documentation that the Supplier has encouraged active involvement of diverse social, cultural, and economic elements of the population within the service area prior to and during the preparation of the plan and contingency plan.	Plan preparation	n/a	Section 1.3
x	x	2.4	Section 2.4.2	10620(d)(3)	Coordinate the preparation of its plan with other appropriate agencies in the area, including other Suppliers that share a common source, water management agencies, and relevant public agencies, to the extent practicable.	Plan preparation	n/a	Section 1.3
x	n/a	2.4	Section 2.4.1	10631(h)	Retail Suppliers will include documentation that they have provided their Wholesale Supplier(s) - if any - with water use projections from that source.	Plan preparation	2-4 R	Section 1.3.1
n/a	x	2.4	Section 2.4.1	10631(h)	Wholesale Suppliers will provide their Suppliers with identification and quantification of the existing and planned sources of water available from the Wholesale Supplier to the Supplier during various water year types.	Plan preparation	2-4 W	Section 2.4.4
x	x	3	Chapter 3.0	10631(a)	Describe the Supplier service area.	System description	n/a	Chapter 2
x	x	3.3	Section 3.3	10631(a)	Describe the climate of the Supplier's service area.	System description	n/a	Section 2.1
x	x	3.4	Section 3.4.1	10631(a)	Provide the current and projected service area populations for 2030, 2035, 2040, 2045 and optionally 2050.	System description	3-1	Sections 2.3.1 and 2.3.2
x	x	3.4	Section 3.4.2	10631(a)	Describe other social, economic, and demographic factors affecting the Supplier's water management planning.	System description	n/a	Section 2.3.4
x	x	3.5	Section 3.5	10631(a)	Describe the land uses within the service area... include the current and projected land uses within the existing or anticipated service area affecting the Supplier's water management planning. Describe the land uses within the service area.	System description and baselines	n/a	Section 2.3.3
x	Optional	4.2	Sections 4.2.3 and 4.2.4	10631(d)(1)	Quantify past, current, and projected water use, identifying the uses among water use sectors.	System water use	4-1 and 4-2	Sections 4.1, 4.2, 4.4, 4.5
x	Optional	4.3	Section 4.3.1	10631(d)(3)(A)	Report the distribution system water loss for each of the five years preceding the plan update.	System water use	4-5	Sections 4.1.3, 4.2.1
x	n/a	4.3	Section 4.3.2	10631(d)(3)(C)	Retail Suppliers shall provide data to show the distribution loss standards were met.	System water use	4-6	Section 4.1.4
x	n/a	4.2	Section 4.2.5.4	10631.1(a)	Include projected water use needed for lower income housing projected in the service area of the Supplier.	System water use	4-3	Section 4.6
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(A)	In projected water use, include estimates of water savings from adopted codes, plans, and other policies or laws.	System water use	4-3	Chapter 7
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(B)	Provide citations of codes, standards, ordinances, or plans used to make water use projections.	System water use	4-3	Section 4.4
x	n/a	4.2	Section 4.2.5.3	10631(d)(4)(B)(ii)	To the extent that a Supplier reports the information described in subparagraph (A), an urban water Supplier shall... Indicate the extent that the water use projections consider savings from codes, standards, ordinances, or transportation and land use plans. Water use projections that do not account for these water savings shall be noted of that fact.	System water use	4-3	Section 4.4, Section 5.2.1
x	x	4.2	Section 4.2.5.6	10635(b)	Demands under climate change considerations must be included as part of the drought risk assessment.	System water use	n/a	Section 4.7.6
n/a	x	5.1	Section 5.1	10608.36	Wholesale Suppliers shall include an assessment of present and proposed future measures, programs, and policies to help their Retail Suppliers achieve targeted water use reductions.	Baselines and targets	n/a	Section 7.4.5
x	n/a	5.2	Section 5.2	10608.4	Retail Suppliers shall report on their compliance in meeting their water use targets. Reporting requirements will vary depending on whether the Supplier: - Was considered an urban retail water supplier in 2020, - Met its 2020 target in 2020, or - Was part of a merger or consolidation since 2020. Chapter 5 Subsections 5.2.1, 5.2.2, and 5.2.3 address each of these situations.	Baselines and targets	5-1	Section 4.3
x	x	6.1	Section 6.1	10631(b)(2)	When multiple sources of water supply are identified, describe the management of each supply in relationship to other identified supplies.	System supplies	n/a	Chapter 3
x	x	6.1	Sections 6.1 and 6.2	10631(b)(1)	Provide a discussion of anticipated supply availability under a normal, single dry year, and a drought lasting five years, as well as more frequent and severe periods of drought, including changes in supply due to climate change.	System supplies	n/a	Sections 3.1 through 3.4
x	x	6.2	Section 6.2.2	10631(b)(4)(C)	Indicate whether groundwater is an existing or planned source of water available to the Supplier. If groundwater is identified as an existing or planned source of water... (include) a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the Supplier for the past five years.	Water supplies and recycled water	6-1	Section 3.3
x	x	6.2	Section 6.2.2	10631(b)(4)(A)	Indicate whether a groundwater sustainability plan or groundwater management plan has been adopted by the Supplier or if there is any other specific authorization for groundwater management. Include a copy of the plan or authorization.	System supplies	n/a	Section 3.3.3
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	Describe the groundwater basin.	System supplies	n/a	Sections 3.3, 3.3.1, 3.3.2
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	Indicate if the basin has been adjudicated and include a copy of the court order or decree and a description of the amount of water the Supplier has the legal right to pump.	System supplies	n/a	Sections 3.3.1 and 3.3.2
x	x	6.2	Section 6.2.2	10631(b)(4)(B)	For unadjudicated basins... (include) information as to whether DWR has identified the basin as a high- or medium-priority basin in the most current official departmental bulletin.	Water supplies and recycled water	n/a	Sections 3.3.1 and 3.3.2

x	x	6.2	Section 6.2.2	10631(b)(4)(B)	For adjudicated basins... describe efforts by the Supplier to coordinate with sustainability or groundwater agencies to achieve sustainable groundwater conditions.	Water supplies and recycled water	n/a	Section 3.3.3
x	x	6.2	Section 6.2.2.	10631(b)(4)(C)	If groundwater is identified as an existing or planned source of water... (include) a detailed description and analysis of the location, amount and sufficiency of groundwater pumped by the Supplier for the past five years.	System supplies	n/a	Section 3.3.4, Tables 3-14, 3-15
x	x	6.2	Section 6.2.2	10631(b)(4)(D)	Provide a detailed description and analysis of the amount and location of groundwater that is projected to be pumped.	System supplies	6-9	Section 3.3.4, Tables 3-16, 3-17
x	x	6.1	Section 6.1	10631(b)	Identify and quantify the existing and planned sources of water available for 2025, 2030, 2035, 2040, 2045 and optionally 2050.	System supplies	6-8 and 6-9	Section 5.2.2
x	x	6.2	Section 6.2.7	10631(c)	Describe the opportunities for exchanges or transfers of water on a short-term or long-term basis.	System supplies	n/a	Sections, 2.4.4, 3.4.3, 4.7.1, 4.7.6
x	n/a	6.2	Section 6.2.5	10633(a)	Describe the wastewater collection and treatment systems in the Supplier's service area with quantified amount of collection and treatment and the disposal methods.	System supplies (recycled water)	6-2	Section 3.4.1
x	x	6.2	Section 6.2.5	10633(b)	Describe the quantity of treated wastewater that meets recycled water standards, is being discharged, and is otherwise available for use in a recycled water project.	System supplies (recycled water)	6-3	Section 3.4.1, Table 3-19
x	x	6.2	Section 6.2.5	10633(c)	Describe the recycled water currently being used in the Supplier's service area.	System supplies (recycled water)	6-4	Section 3.4.1, Table 3-20
x	x	6.2	Section 6.2.5	10633(d)	Describe and quantify the potential uses of recycled water and provide a determination of the technical and economic feasibility of those uses.	System supplies (recycled water)	6-4	Section 3.4.1, Table 3-20
x	x	6.2	Section 6.2.5	10633(e)	Describe the projected use of recycled water within the Supplier's service area at the end of 5, 10, 15, and 20 years, and describe the actual use of recycled water in comparison to uses previously projected.	System supplies (recycled water)	6-4 and 6-5	Section 3.4.1, Table 3-20
x	x	6.2	Section 6.2.5	10633(f)	Describe the actions that may be taken to encourage the use of recycled water and the projected results of these actions in terms of acre-feet of recycled water used per year.	System supplies (recycled water)	6-6	Section 3.4.1
x	x	6.2	Section 6.2.5	10633(g)	Provide a plan for optimizing the use of recycled water in the Supplier's service area.	System supplies (recycled water)	n/a	Section 3.4.1
x	x	6.2	Section 6.2.6	10631(g)	Describe desalinated water project opportunities for long-term supply.	System supplies	6-7	Section 3.4.2
x	x	6.2	Section 6.2.10	10631(f)	Describe the expected future water supply projects and programs that may be undertaken by the water Supplier to address water supply reliability in average, single-dry, and for a period of drought lasting five consecutive water years.	System supplies	6-7	Section 4.7
x	x	6.3	Section 6.3 and Appendix O	10631.2(a)	The UWMP must include energy information, as stated in the code, that a Supplier can readily obtain.	System suppliers, energy intensity	0-1A, 0-1B, 0-1C, and 0-2	Section 2.5, Table 2-9
x		7.1	Section 7.1	10634	Provide information on the quality of existing sources of water available to the Supplier and the manner in which water quality affects water management strategies and supply reliability.	Water supply reliability assessment	n/a	Section 3.5
x	x	7.2	Section 7.2	10635(a)	Service Reliability Assessment: Assess the water supply reliability during normal, dry, and a drought lasting five consecutive water years by comparing the total water supply sources available to the Supplier with the total projected water use over the next 20 years.	Water supply reliability assessment	7-2, 7-3, and 7-4	Chapter 5
x	x	7.2	Section 7.2.3	10620(f)	Describe water management tools and options to maximize resources and minimize the need to import water from other regions.	Water supply reliability assessment	n/a	Sections 7.2 through 7.4
x	x	7.3	Section 7.3	10635(b)	Provide a drought risk assessment as part of information considered in developing the demand management measures and water supply projects.	Water supply reliability assessment	n/a	Section 3.6
x	x	7.3	Section 7.3	10635(b)(1)	Include a description of the data, methodology, and basis for one or more supply shortage conditions that are necessary to conduct a drought risk assessment for a drought period that lasts five consecutive years.	Water supply reliability assessment	n/a	Section 3.6
x	x	7.3	Section 7.3	10635(b)(2)	Include a determination of the reliability of each source of supply under a variety of water shortage conditions.	Water supply reliability assessment	n/a	Sections 3.2, 3.3, 3.6
x	x	7.3	Section 7.3	10635(b)(3)	Include a comparison of the total water supply sources available to the Supplier with the total projected water use for the drought period.	Water supply reliability assessment	7-5	Sections 5.1 and 5.2, Tables 5-1 through 5-5
x	x	7.3	Section 7.3	10635(b)(4)	Include considerations of the historical drought hydrology, plausible changes on projected supplies and demands under climate change conditions, anticipated regulatory changes, and other locally applicable criteria.	Water supply reliability assessment	n/a	Sections 3.7, 5.2.1,
x	x	8	Chapter 8	10632(a)	Provide a water shortage contingency plan (WSCP) with specified elements below.	Water shortage contingency planning	n/a	Chapter 6
x	x	8	Chapter 8	10632(a)(1)	Provide an analysis of water supply reliability (from Guidebook Chapter 7) in the WSCP.	Water shortage contingency planning	n/a	Section 6.1
x	x	8.2	Section 8.2	10632(a)(2)(A)	Provide the written decision-making process and other methods that the Supplier will use each year to determine its water reliability.	Water shortage contingency planning	n/a	Sections 6.1 and 6.3
x	x	8.2	Section 8.2	10632(a)(2)(B)	Provide data and methodology to evaluate the Supplier's water reliability for the current year and one dry year pursuant to factors in the code.	Water shortage contingency planning	n/a	Sections 6.1 and 6.3
x	x	8.3	Section 8.3	10632(a)(3)(A)	Define six standard water shortage levels of 10%, 20%, 30%, 40%, 50% shortage, and greater than 50% shortage. These levels shall be based on supply conditions, including percent reductions in supply, changes in groundwater levels, changes in surface elevation, or other conditions. The shortage levels shall also apply to a catastrophic interruption of supply.	Water shortage contingency planning	n/a	Section 6.4, Table 6-2
x	x	8.3	Section 8.3	10632(a)(3)(B)	Suppliers with an existing WSCP that uses different water shortage levels must cross reference their categories with the six standard categories.	Water shortage contingency planning	8-1	N/A
x	x	8.4	Section 8.4	10632(a)(4)(A)	Suppliers with WSCPs that align with the defined shortage levels must specify locally appropriate supply augmentation actions.	Water shortage contingency planning	8-2	Section 6.5.3; Appendix A - WSCP, Water Shortage Emergency Planning Actions
x	x	8.4	Section 8.4	10632(a)(4)(B)	Specify locally appropriate demand reduction actions to adequately respond to shortages.	Water shortage contingency planning	8-3	Section 6.5.1, Table 6-3
x	x	8.4	Section 8.4	10632(a)(4)(C)	Specify locally appropriate operational changes.	Water shortage contingency planning	8-2	Section 6.5.3
x	x	8.4	Section 8.4	10632(a)(4)(D)	Specify additional mandatory prohibitions against specific water use practices that are in addition to State-mandated prohibitions are appropriate to local conditions.	Water shortage contingency planning	Table 8-3	Sections 6.5.2
x	x	8.4	Section 8.4	10632(a)(4)(E)	Estimate the extent to which the gap between supplies and demand will be reduced by implementation of the action.	Water shortage contingency planning	8-2 and 8-3	Section 6.5.3, Table 6-4
x	x	8.4	Section 8.4.6	10632.5	The UWMP shall include a seismic risk assessment and mitigation plan.	Water shortage contingency plan	n/a	Section 6.6
x	x	8.5	Section 8.5	10632(a)(5)(A)	Suppliers must describe that they will inform customers, the public and others regarding any current or predicted water shortages.	Water shortage contingency planning	n/a	Section 6.4, Table 6-2
x	x	8.5	Section 8.5	10632(a)(5)(B), 10632(a)(5)(C)	Suppliers must describe that they will inform customers, the public and others regarding any shortage response actions triggered or anticipated to be triggered and other relevant communications.	Water shortage contingency planning	n/a	Section 6.9

x	n/a	8.6	Section 8.6	10632(a)(6)	Retail Supplier must describe how it will ensure compliance with and enforce provisions of the WSCP.	Water shortage contingency planning	n/a	Section 6.7
x	x	8.7	Section 8.7	10632(a)(7)(A)	Describe the legal authority that empowers the Supplier to enforce shortage response actions.	Water shortage contingency planning	n/a	Section 6.7
x	x	8.7	Section 8.7	10632(a)(7)(B)	Provide a statement that the Supplier will declare a water shortage emergency per Water Code Chapter 3, <i>Water Shortage Emergencies</i> .	Water shortage contingency planning	n/a	Section 6.7
x	x	8.7	Section 8.7	10632(a)(7)(C)	Provide a statement that the Supplier will coordinate with any city or county within which it provides water for the possible proclamation of a local emergency.	Water shortage contingency planning	n/a	Section 6.7
x	x	8.8	Section 8.8	10632(a)(8)(A)	Describe the potential revenue reductions and expense increases associated with activated shortage response actions.	Water shortage contingency planning	n/a	Section 6.8.1
x	x	8.8	Section 8.8	10632(a)(8)(B)	Provide a description of mitigation actions needed to address revenue reductions and expense increases associated with activated shortage response actions.	Water shortage contingency planning	n/a	Section 6.8.1
x	n/a	8.8	Section 8.8	10632(a)(8)(C)	Retail Suppliers must describe the cost of compliance with Water Code Chapter 3.3, <i>Excessive Residential Water Use During Drought</i> .	Water shortage contingency planning	n/a	Section 6.8
x	n/a	8.9	Section 8.9	10632(a)(9)	Retail Suppliers shall describe the monitoring and reporting requirements and procedures that ensure appropriate data are collected, tracked, and analyzed for purposes of monitoring customer compliance.	Water shortage contingency planning	n/a	Section 6.9; Appendix A - WSCP Task Force, Prohibitions & Restrictions, Water Rates and Penalties
x	x	8.10	Section 8.10	10632(a)(10)	Describe reevaluation and improvement procedures for monitoring and evaluation the WSCP to ensure risk tolerance is adequate and appropriate water shortage mitigation strategies are implemented.	Water shortage contingency planning	n/a	Section 6.9
x	n/a	8.11	Section 8.11	10632(b)	Analyze and define water features that are artificially supplied with water, including ponds, lakes, waterfalls, and fountains, separately from swimming pools and spas.	Water shortage contingency planning	n/a	Section 6.10
x	x	8.12	Section 8.12	10632(c)	Make available the WSCP to customers and any city or county where it provides water within 30 days after adoption of the plan.	Water shortage contingency planning	n/a	Section 6.11
x	n/a	9.1	Sections 9.1	10631(e)(1)	Retail Suppliers shall provide a description of the nature and extent of each demand management measure implemented over the past five years. The description will address specific measures listed in code.	Demand management measures	n/a	Section 7.2, Table 7-1, Section 7.3
n/a	x	9.2	Sections 9.2	10631(e)(2)	Wholesale Suppliers shall describe specific demand management measures listed in code, their distribution system asset management program, and Supplier assistance program.	Demand management measures	n/a	Section 7.4
x	n/a	10	Chapter 10	10608.26(a)	Retail Suppliers shall conduct a public hearing to discuss adoption, implementation, and economic impact of water use targets (recommended to discuss compliance).	Plan adoption, submittal, and implementation	n/a	Section 1.4
x	x	10.2	Section 10.2.1	10621(b)	Notify, at least 60 days prior to the public hearing, any city or county within which the Supplier provides water that the Supplier will be reviewing the UWMP and considering amendments or changes to the plan.	Plan adoption, submittal, and implementation	10-1	Section 1.3
x	x	10.4	Section 10.4	10621(f)	Each urban water Supplier shall update and submit its 2025 plan to DWR by July 1, 2026.	Plan adoption, submittal, and implementation	n/a	Section 1.4
x	x	10.2	Sections 10.2.2, 10.3, and 10.5	10642	Provide supporting documentation that the Supplier made the UWMP and WSCP available for public inspection, published notice of the public hearing, and held a public hearing about the UWMP and WSCP.	Plan adoption, submittal, and implementation	n/a	Appendix B
x	x	10.2	Section 10.2.2	10642	The Supplier is to provide the time and place of the hearing to any city or county within which the Supplier provides water.	Plan adoption, submittal, and implementation	10-1	Section 1.4
x	x	10.3	Section 10.3.2	10642	Provide supporting documentation that the UWMP and WSCP has been adopted as prepared or modified.	Plan adoption, submittal, and implementation	n/a	Appendix E
x	x	10.4	Section 10.4	10644(a)	Provide supporting documentation that the Supplier has submitted their UWMP to the California State Library.	Plan adoption, submittal, and implementation	n/a	Appendix B
x	x	10.4	Section 10.4	10644(a)(1)	Provide supporting documentation that the Supplier has submitted their UWMP to any city or county within which the Supplier provides water no later than 30 days after adoption.	Plan adoption, submittal, and implementation	n/a	Section 1.4, Appendix B
x	x	10.4	Sections 10.4.1 and 10.4.2	10644(a)(2)	The UWMP, or amendments to the UWMP, submitted to DWR shall be submitted electronically.	Plan adoption, submittal, and implementation	n/a	Section 1.4, Appendix B
x	x	10.7	Section 10.7.2	10644(b)	If revised, submit a copy of the WSCP to DWR within 30 days of adoption.	Plan adoption, submittal, and implementation	n/a	Appendix B
x	x	10.5	Section 10.5	10645(a)	Provide supporting documentation that, not later than 30 days after filing a copy of its UWMP with DWR, the Supplier has or will make the plan available for public review during normal business hours.	Plan adoption, submittal, and implementation	n/a	Section 1.4, Appendix B
x	x	10.5	Section 10.5	10645(b)	Provide supporting documentation that, not later than 30 days after filing a copy of its WSCP with DWR, the Supplier has or will make the plan available for public review during normal business hours.	Plan adoption, submittal, and implementation	n/a	Section 1.4, Appendix B
x	x	10.6	Section 10.6	10621(c)	If Supplier is regulated by the Public Utilities Commission, include its plan and contingency plan as part of its general rate case filings.	Plan adoption, submittal, and implementation	n/a	N/A

Appendix E – Adopting Resolution

RESOLUTION 2026-0163

Adopted by the Sacramento City Council

June 16, 2026

Adoption of the 2025 Urban Water Management Plan and Update to the Water Shortage Contingency Plan

BACKGROUND

- A. California Water Code § 10620 requires that an urban water supplier prepare and adopt an Urban Water Management Plan. Once adopted, the Water Code requires that the Urban Water Management Plan be updated every five years.
- B. The City's most recent Urban Water Management Plan update was adopted June 2021.
- C. The City has prepared the 2025 update to its Urban Water Management Plan, consisting of the draft Urban Water Management Plan circulated for public review, modified to include the revisions attached to the staff report for this item.
- D. Senate Bill 606 and Assembly Bill 1668, passed in 2018, set new requirements for Water Shortage Contingency Plan (WSCP) which must be adopted by the governing body and are due to the Department of Water Resources by July 1, 2026, with the Urban Water Management Plan.
- E. The City Council has held a public hearing on the Plan as required under Water Code § 10642.

BASED ON THE FACTS SET FORTH IN THE BACKGROUND, THE CITY COUNCIL RESOLVES AS FOLLOWS:

SECTION 1.

The City Council adopts the City's 2025 Urban Water Management Plan update and directs the Director of Utilities to file copies of the plan with the State Department of Water Resources, the California State Library, and the County of Sacramento. If the State Department of Water Resources requires any revisions prior to acceptance of the Urban Water Management Plan, such Plan revisions shall be approved by the Director of the Department of Utilities prior to resubmittal.

SECTION 2.

The City Council adopts the City's updated Water Shortage Contingency Plan separately from the 2025 Urban Water Management Plan. If the State Department of Water Resources requires any revisions prior to acceptance of the Water Shortage Contingency Plan, such Plan revisions shall be approved by the Director of the Department of Utilities prior to resubmittal.

Adopted by the City of Sacramento City Council on June 16, 2026, by the following vote:

Ayes: Members Dickinson, Jennings, Kaplan, Pluckebaum, Talamantes, and Vang

Noes: None

Abstain: None

Absent: Members Guerra, Maple, and Mayor McCarty

Attest:  06/29/2026

Mindy Cuppy, City Clerk

The presence of an electronic signature certifies that the foregoing is a true and correct copy as approved by the Sacramento City Council.