

2025 ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT

FINAL

JUNE 2025



City of
**Santa
Monica**

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List of Acronyms

AF	Acre-Feet
AFY	Acre-Feet Per Year
AMI	Advanced Metering Infrastructure
AWSDA	Annual Water Supply and Demand Assessment
AWTF	Advanced Water Treatment Facility
CWC	California Water Code
DWR	Department of Water Resources
GAC	Granular Activated Carbon
GSP	Groundwater Sustainability Plan
MG	Million Gallons
MGD	Million Gallons Per Day
MTBE	Methyl Tert-Butyl Ether
MWD	Metropolitan Water District of Southern California
PFAS	Per- and Polyfluoroalkyl Substances
SGMA	Sustainable Groundwater Management Act of 2014
SMB	Santa Monica Basin
SMBGSA	Santa Groundwater Basin Groundwater Sustainability Agency
SMURRF	Santa Monica Urban Runoff Recycling Facility
SWIP	Sustainable Water Infrastructure Project
SWMP	Sustainable Water Management Plan
SWRCB	State Water Resources Control Board
RO	Reverse Osmosis
TBA	Tert-Butyl Alcohol
WCU	Water Conservation Unit
WSCP	Water Shortage Contingency Plan
WRD	Water Resources Division
WTP	Water Treatment Plant
WUA	Water Use Allowance

1 INTRODUCTION

This report summarizes findings from the City of Santa Monica (City) 2025 Annual Water Supply and Demand Assessment (AWSDA). The AWSDA is required by the California Water Code (§10632.1) to analyze current water supply and demand conditions as well as project water supply reliability each year. In doing so, AWSDA's serve as a tool to help identify potential water supply shortages and to implement water shortage response actions to mitigate possible supply gaps.

Beginning in 2022, the California Water Code (§10632.1) required urban water suppliers to conduct an AWSDA and submit an annual water shortage assessment report to the California Department of Water Resources (DWR) on or before July 1 of each year. The annual water shortage assessment report evaluates water supply reliability over the following year and provides an explanation of the process, data, and results of the assessment.

1.1 CALIFORNIA WATER CODE REQUIREMENTS

The City's 2025 AWSDA was performed in compliance with California Water Code (CWC) requirements. Guidelines for the AWSDA can be found in CWC Section 10632 and a brief summary is provided below.

CWC §10632.1 An urban water supplier shall conduct an annual water supply and demand assessment pursuant to subdivision (a) of Section 10632 and, on or before July 1 of each year, submit an annual water shortage assessment report to the department with information for anticipated shortage, triggered shortage response actions, compliance and enforcement actions, and communication actions consistent with the supplier's water shortage contingency plan. An urban water supplier that relies on imported water from the State Water Project or the Bureau of Reclamation shall submit its annual water supply and demand assessment within 14 days of receiving its final allocations, or by July 1 of each year, whichever is later.

CWC §10632(a)(2) The procedures used in conducting an annual water supply and demand assessment that include, at a minimum, both of the following:

(A) The written decision-making process that an urban water supplier will use each year to determine its water supply reliability.

(B) The key data inputs and assessment methodology used to evaluate the urban water supplier's water supply reliability for the current year and one dry year, including all of the following:

- (i) Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable.
- (ii) Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.
- (iii) Existing infrastructure capabilities and plausible constraints.
- (iv) A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.
- (v) A description and quantification of each source of water supply.

The written decision-making process used to determine water supply reliability and key data inputs and assessment methodology used for the 2025 AWSDA are detailed in Section 2 of this report, Annual Water Supply and Demand Assessment.

1.2 WATER SYSTEM OVERVIEW

The City's current domestic water supply consists of local groundwater and purchased imported water (either from the State Water Project or the Colorado River) from the Metropolitan Water District of Southern California (MWD). The City extracts local groundwater from ten active groundwater wells located in the Santa Monica Groundwater Basin (SMB). Five of these wells are located in the Charnock subbasin, two are located in the Olympic subbasin, and three are located in the Arcadia subbasin. Three of the five wells located in the Charnock subbasin are pretreated at the Charnock Water Treatment Plant (Charnock WTP) to remove volatile organic carbon compounds from historical industrial pollution and then blended with the two other Charnock wells prior to being pumped to the Arcadia Water Treatment Plant (Arcadia WTP) for further treatment. Groundwater pumped from the Olympic and Arcadia subbasins are also treated at the Arcadia WTP. The Arcadia WTP provides multi-barrier treatment to the majority of the City's groundwater wells to reduce hardness in the groundwater and meet all federal and state drinking water regulations. Only one groundwater well, SM-1, located in the Arcadia subbasin is distributed, after disinfection at the well head, directly into the water distribution system as it does not require any additional treatment to meet federal and state drinking water regulations. Final treated water from the Arcadia WTP is sent to the 5-million-gallon (MG) Arcadia Reservoir and distributed for potable water use throughout the City. In addition to the Arcadia Reservoir, the City also owns and operates three additional water storage reservoirs representing a total storage capacity of 40 MG: Riviera Reservoir, Mt. Olivette Reservoir, and San Vincente Reservoir.

The City supplements its local groundwater supply with imported water purchased from MWD. The City, along with 12 other local governments, formed the MWD in 1928. MWD was originally created to build the Colorado River Aqueduct to supplement the water supplies of the original founding members in Southern California. Water was first delivered to the City in 1941 via the Colorado River Aqueduct. In 1972, MWD augmented its supply sources to include deliveries from the State Water Project via the California Aqueduct. Today, MWD serves more than 145 cities and 94 unincorporated communities across Southern California.

An overview of the existing domestic potable water system is shown in Figure 1-1.

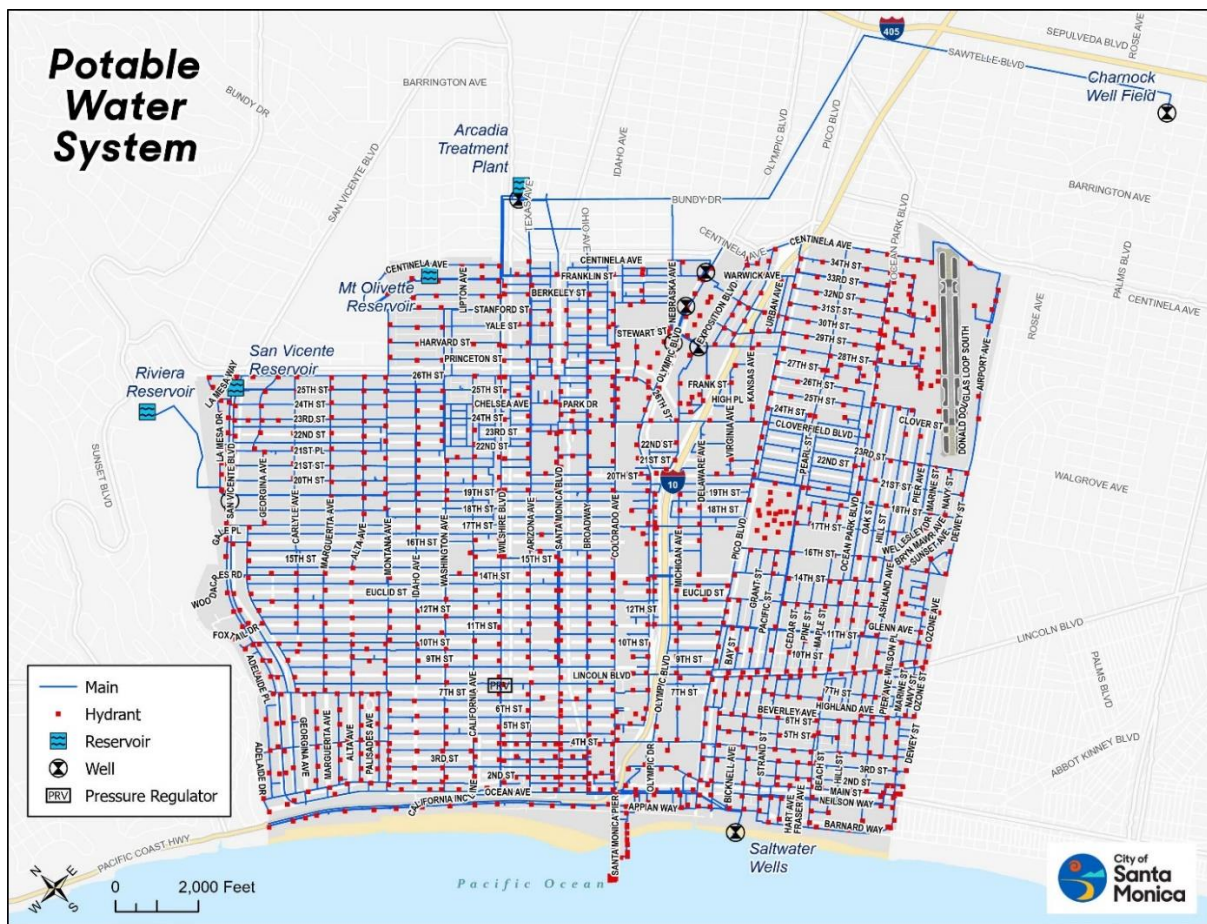


Figure 1-1. Potable Water System Overview

The City also has a dedicated recycled water system that provides service to 30 metered locations currently. The primary use of recycled water is for landscape irrigation but is also used for street sweeping, sewer jetting, and for lavatories at two facilities. Recycled water is distributed from the Santa Monica Urban Runoff Recycling Facility (SMURRF), which

captures and treats urban runoff from the storm drain system, and the Sustainable Water Infrastructure Project (SWIP), which captures and treats wastewater and stormwater.

In November 2018, City Council adopted an updated Sustainable Water Master Plan (SWMP). The intent of the 2018 SWMP update was to refine the pathway for the City to reduce its reliance on imported water. The refined pathway also considered impacts of on-going drought conditions as well as new regulations that required additional treatment for restoring local groundwater supplies. The 2018 SWMP builds on the City's previous successes by continuing to develop projects and programs at the local level to enhance the reliability and resiliency of the City's water supply. The 2018 SWMP consisted of three key components and a brief summary on progress is listed below.

- **Component 1 – Increasing water conservation efforts to permanently reduce water demand.** The City developed its first Water Conservation Master Plan that was completed March 2024 aimed to realign, post pandemic, and increase water conservation efforts to permanently reduce water demand.
- **Component 2 – Developing sustainable and drought resilient alternative water supplies.** A ribbon cutting ceremony was held for the City's SWIP in November 2022 and began full operations in December 2023, after accelerating regulatory testing for groundwater recharge operations for the majority of 2023. The SWIP leverages stormwater, dry weather urban runoff, brackish groundwater, and municipal wastewater to provide up to 1,650 acre-feet per year of sustainable, drought resilient water supply to the City's water supply portfolio. The City is also making progress on enhancing the production efficiency at the Arcadia WTP through concentrate recovery by implementing the first municipal installation of Flow Reversal Reverse Osmosis (FR-RO) that would provide an additional 1,200 acre-feet per year of drinking water for the City and set to be completed by April 2025.
- **Component 3 – Expanding local groundwater production within sustainable yield limits.** To maximize local groundwater supplies, the City is constructing a new well head treatment facility to remove industrial contaminants in the Olympic Well Field and restore it to full production capacity. The new Olympic Advanced Water Treatment Facility is scheduled for completion by summer 2025.

When fully implemented, the projects outlined in the 2018 SWMP will provide a diversified, drought-resilient water supply portfolio that leverages all available water resources to the City. The key components of the SWMP are listed below and shown in Figure 1-2.

Component 3 – New Local Groundwater
Expansion of Arcadia WTP

Component 2 – Alternative Water Supply
Production Efficiency Upgrade at Arcadia

Component 1 – Optimal Conservation Plan

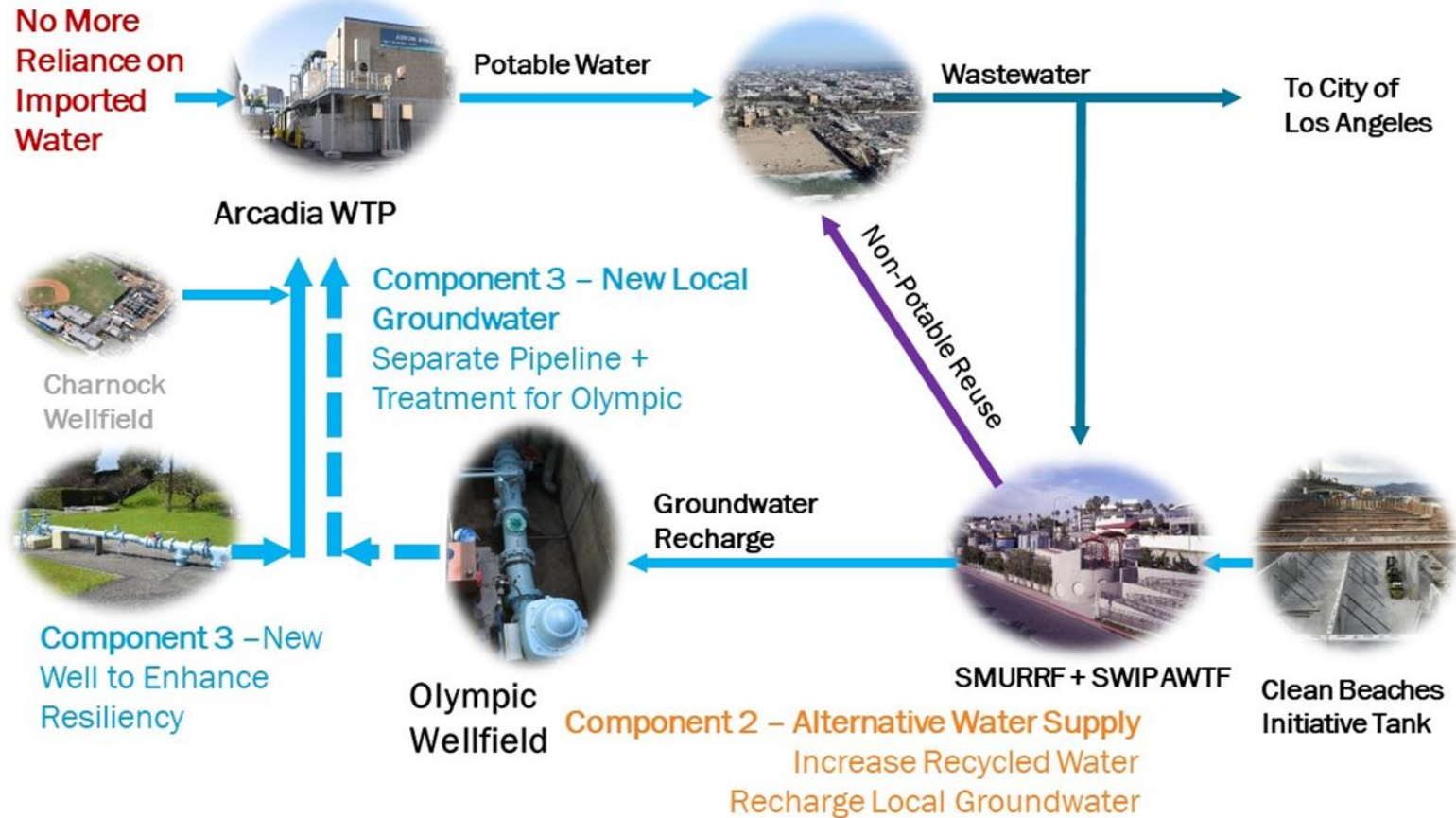


Figure 1-2. Components of the 2018 Sustainable Water Master Plan

2 ANNUAL WATER SUPPLY AND DEMAND ASSESSMENT

AWSDAs analyze current water demand and supply conditions and project water supply reliability over the next year. To analyze current water demand and supply, City staff compiled water use and water supply data over the previous calendar year (i.e., January 1, 2024 to December 31, 2024) to project the current year's trends for water demand and supply. This information, in combination with other considerations such as anticipated growth, weather patterns, State and local regulations and policies, and other plausible factors, were then used to project demand and supply over the next year. Because annual water shortage assessment reports are due by July 1st of each year, the projected water demand and supply is for the period from July 1, 2025, to June 30, 2026. The CWC requires the projected assessment period to be a dry year. The following sections detail the decision-making process and data inputs used for the AWSDA and water shortage assessment report.

2.1 DECISION-MAKING PROCESS

CWC §10632 requires AWSDAs to be conducted according to a written decision-making process. The City's written decision-making process is outlined in the City's Water Shortage Contingency Plan (WSCP), which serves as the City's action plan during an actual or predicted drought or a catastrophic water supply shortage. The process includes:

- Presenting the findings to the City's Commission on Sustainability, Environmental Justice, and the Environment (formerly the Task Force on the Environment)
- Public notification regarding the proposed water supply shortage stage, water shortage response actions, and upcoming City Council meeting for the Public Hearing; and
- Formal adoption of the annual water shortage assessment report findings and proposed water supply shortage stage by City Council.

A timeline for the decision-making process is provided in Table 2-1.

Table 2-1. Annual Water Supply and Demand Assessment Process

Month	Activity
January	City of Santa Monica Water Resources Division's (WRD) commences the annual water supply and demand assessment
February	WRD presents annual assessment findings and proposed water supply shortage stage to the Commission on Sustainability, Environmental Justice, and the Environment
March	WRD prepares an annual water shortage assessment report and proposed water supply shortage stage, if any, to the Public Works Department Head for approval
April	Public notification regarding proposed water supply shortage stage, water shortage response actions, and upcoming City Council meeting
May/June	WRD presents annual water shortage assessment report findings and proposed water supply shortage stage to City Council for formal adoption by resolution
On or before July 1st	WRD submits a final water shortage assessment report to the State of California Department of Water Resources (DWR)

2.2 KEY DATA INPUTS

CWC §10632 requires the following data inputs and assessment methodology to be used to evaluate the urban water supplier's water supply reliability for the current year and one dry year:

- Current year unconstrained demand, considering weather, growth, and other influencing factors, such as policies to manage current supplies to meet demand objectives in future years, as applicable. Unconstrained demand is defined by the CWC as "water demand absent any water supply and demand restrictions".
- Current year available supply, considering hydrological and regulatory conditions in the current year and one dry year. The annual supply and demand assessment may consider more than one dry year solely at the discretion of the urban water supplier.
- Existing infrastructure capabilities and plausible constraints (e.g., shutdown of the City's water treatment plant for extended durations or unforeseen extended outages of the City's groundwater production wells).
- A defined set of locally applicable evaluation criteria that are consistently relied upon for each annual water supply and demand assessment.
- A description and quantification of each source of water supply.

The following sections describe these inputs in detail.

2.2.1 Water Demand

Water usage for the City is tracked by six customer categories: Single-Family Residential, Multi-Family Residential, Commercial/Industrial, Institutional, Landscape, and Fire Service. Predominate water use in the City is by residential users, which account for more than two-thirds of the City’s total water consumption. Within the residential users, total water usage in the multi-family residential category (roughly 45% of total) is significantly higher than the total water usage of single family residential (roughly 24% total).

Commercial/industrial water consumption is approximately 24% of the total water usage within the City. The other three sectors (institutional, landscape, and fire service) combined account for approximately 7% of total water use in the City. Table 2-2 summarizes the constrained water demand in the City over the last five years in acre-feet (AF). An acre-foot is defined as the volume of water that would cover one acre of land to a depth of one foot. Constrained demand is calculated by subtracting the water demand reduction (e.g., the City’s water conservation program) from the unconstrained demand. The City’s water conservation efforts to date equates to approximately 20% of the unconstrained water demand.

Table 2-2. Constrained Water Demand by Sector in Acre-Feet (2020-2024)

	2020	2021	2022	2023	2024
Single Family Residential	2,756	2,845	2,577	2,246	2,316
Multi-Family Residential	4,944	4,752	4,613	4,228	4,283
Industrial/Commercial	2,100	2,131	2,458	2,340	2,288
Institutional	273	267	289	278	262
Landscape Irrigation	438	576	469	337	421
Fire Service	2	3	3	5	8
Water Loss	66	-	192	1,001	-1
Constrained Demand²	10,579	10,574	10,601	10,435	9,578

¹Water Loss Audit has yet to be completed for 2024.

²Demand summarized in this table are actual water demand (or constrained water demand as defined by DWR), which includes water demand reduction from water conservation efforts.

Compared to 2023, single family and multi-family residential water usage in 2024 increased by 70 AF and 55 AF, respectively. The industrial/commercial sector experienced

a decrease in usage of 52 AF. Institutional usage decreased by 16 AF, while landscape usage increased by 84 AF. Fire service usage increased by 3 AF.

Likely contributors to the increase in water usage for 2024 for the residential sectors and landscape irrigation include record high temperatures in the state, which lends itself to increased water usage indoors and outdoors. The decrease in usage for the industrial/commercial sector and institutional sector could be caused by the closure of businesses throughout the City.

The water demand summarized in Table 2-2 also considered water loss in the water distribution system. Distribution system water loss, defined as the difference between water supplied to the system less authorized consumption, has declined linearly during this reporting period. The City meets the Water Loss Audit Standard through its participation in annual water audits. The audits are validated by an independent third-party according to American Water Works Association standards. In 2020, 2022, and 2023 the total water loss was 66 AFY, 192 AFY, and 1,001 AFY, respectively. However, in 2021 water consumption exceeded water supplied, and therefore it is assumed that water loss was 0 AFY in 2021.

The discrepancy for water consumption exceeding water supplied has been attributed to several factors. First, the City maintains a manual meter reading process over a 60-day billing cycle so there is a lag in consumption data relative to source water entering the system. Second, the metering of the source water entering the City's distribution system are in multiple locations. The City's potable water supply has four sources entering the system: imported water from two MWD feeder services (SMN-01 and SMN-02) and local treated groundwater from Santa Monica Well 1 and the Arcadia WTP. MWD's two feeder service lines both have dedicated flowmeters and are maintained by MWD. Santa Monica Well 1 has a dedicated magnetic flowmeter. The Arcadia WTP does not have a single flowmeter for the potable water produced. Rather, treated water flow from the Arcadia WTP is calculated using a composite of multiple internal flowmeters at the Arcadia WTP. These internal flows originate from internal bypass flows and RO product flows, with each meter subject to its own margin of error. It is likely that the discrepancies in reporting are due to compounded inaccuracies from the various flow meters when tabulated.

As part of the Arcadia WTP Expansion Project, the City installed a single potable water flow meter at the inlet to the Arcadia Reservoir to provide a single data source and more accurately measure potable water produced by the Arcadia WTP entering the distribution system. The flow meter has been operational since October 2023. In addition, the City is upgrading water meters on the customer's end with Advanced Metering Infrastructure (AMI) throughout the distribution system with full implementation across the City by June 2025. The new meter at the Arcadia WTP will allow for more accurate flow production

accounting while the AMI smart meters provide for real-time water demand monitoring in the distribution system as opposed to the current 60-day meter reading cycle.

2.2.1.1 Water Conservation

The City has a long history of promoting water conservation. In 2002, the City initiated its Water Efficiency Strategic Plan and in 2004 began implementing various conservation programs including the No Water Waste and Green Building Ordinances. On August 12, 2014, City Council adopted a resolution declaring a Stage 2 Water Supply Shortage thereby requiring mandatory water conservation to achieve a 20% reduction in water use compared to 2013. Subsequently, on October 28, 2014, Council also authorized the significant expansion of staffing and funding to augment the City's water conservation efforts to address the state-wide drought and help the City reduce its reliance on imported water supplies. The City has remained in a Stage 2 Water Shortage since 2014, which has contributed to a water demand reduction of approximately 20% or approximately 2,500 acre-feet per year (AFY). More recently, the City implemented tighter outdoor watering restrictions in July 2022, limiting outdoor watering to two days per week in response to severe drought conditions across the State of California.

Water Demand Management is achieved through implementation of various water conservation and efficiency programs designed to permanently reduce residential and commercial potable water use. Continuation of existing and implementation of proposed conservation measures are essential for the City to reduce overall use in the face of increased demand pressures from new housing and from the commercial and institutional sectors of the local economy. Below is a list of some of the key conservation measures currently being implemented:

- **Water Neutrality Ordinance (SMMC 7.16.050):** On July 1, 2017, the City's Water Neutrality Ordinance went into effect which caps water use for new developments to the average five-year historical water use for that individual parcel. If the projected annual water use for the development is greater than existing parcel's annual average over the past five years, the increased amount must be offset by funding water-efficient retrofits of existing buildings elsewhere in the City. Offset retrofits currently include low-flow indoor fixtures (toilets, urinals, showerheads, aerators). The ordinance applies to pools, ponds, spas and other water features as well. This ordinance was developed and is implemented by Water Conservation Unit (WCU) staff. Implementation includes performing over 500 development project plan checks each year along with determining fees and managing a full-scale Water Neutrality Direct Install program.
- **Recycled Water Ordinance (SMMC 7.12.170):** On January 1, 2023, the City's recycled water ordinance went into effect which requires all new development within the recycled water service area and with a total floor area of 7,500 square feet or more

to utilize 100% recycled water for surface irrigation and/or dual- plumbing applications, as applicable, serving all non-potable water demands within the development. This includes applications using potable water that can be replaced with recycled water like landscaping, water features, toilet flushing, and cooling towers.

- **Water Use Allowances (WUAs):** The WUA is a component of the WSCP and is the mechanism to implement the mandatory reduction required by a Water Supply Shortage. WUAs represent the amount of water that can be used by a water customer without risk of receiving an exceedance citation (see below). The WUA for the current Stage 2 Water Supply Shortage is 20% below the amount of water used in 2013. Every water customer in the City receives a WUA uniquely calculated for each billing period.
- **Water Use Allowance Exceedance Citations:** A water customer can receive an administrative citation for exceeding their WUA for any given billing period. Citation fees are \$250 for the first exceedance, \$500 for the second exceedance (within 12 months of the first) and \$1,000 for the third exceedance (within 12 months of the second). Since 2015, over 1,300 WUA Exceedance Citations have been issued.
- **Water Use Consultations:** WCU staff make onsite visits to customers to validate water meter readings and comprehensively audit indoor water use (measuring flush and flow fixtures, appliances, checking for leaks, behaviors) and outdoor water use (irrigation system, checking for leaks, behaviors). Recommendations for saving water are documented and sent to the customer. Consultations have resulted in the discovery and repair of major leaks, adjustment of irrigation system timers, installation of low-flow devices (aerators and showerheads [free]), toilets and urinals (rebates), and water-use behavior changes. This program is free of charge for any Santa Monica water customer. Since 2015, over 700 consultations have been provided to City customers.
- **Landscape Rebate Program:** The City's most successful rebate program provides rebates for customers that replace their turf grass and overhead spray irrigation with sustainable, drought tolerant, and low-water alternatives using landscapes with no or drip irrigation only. Santa Monica's unique landscape rebate requirements establish effective water conservation, provide successful and maintainable projects, and ensure an aesthetically pleasing landscape. Since 2015, over 940 rebate projects have been completed removing over 1.5 million square feet of turf at a program cost of \$3.5 million.
- **Landscape Consultants:** The WCU has partnered with professional landscape professionals who meet with potential landscape rebate customers at their property and provide expert advice on sustainable landscaping and completing a rebate. This

service is \$50 for a two-hour consultation. Since 2015, over 620 Landscape Consultations have been completed. Note: This program was halted in 2020 due to COVID-19 budget cuts.

- **Water Waste Response:** WCU staff enforces SMMC 7.16.020, the “No Water Waste” ordinance. Responses to inbound water waste complaints are handled immediately, and proactive patrols in the community provide on-site detection of water waste. A Notice of Violation is issued to the water customer with Citations issued as needed if the water waste continues. Since 2015, over 1,500 Notices of Violations have been issued.
- **MWD Water Conservation Rebates:** As a member-agency of the MWD, the City participates in the MWD’s program to provide rebates for high efficiency toilets, urinals, clothes washers, restaurant appliances, irrigation devices and other devices. Since 2015, the WCU has increased the supplemental funding added to MWD’s base rebate amounts to further incentivize installation of these water-conserving devices. Since 2015, over 8,000 devices have been rebated.
- **Free Water Saving Items:** WCU staff has distributed thousands of water saving items to Santa Monica water customers since 2015. These items include low-flow faucet aerators, low-flow showerheads, automatic shut-off hose nozzles, toilet leak-detection dye tabs, shower buckets, flow-rate bags, and reusable canvas bags. The WCU also provides free tent cards and door hangers for hotels/motels to encourage water conservation by guests through reusing towels and sheets. These free items are available in the City Hall and are also distributed at outreach events. Since 2015, over 17,000 water saving devices have been distributed.
- **Customer Support:** WCU staff provides excellent customer phone and email support every workday regarding any water conservation issue or program. Approximately 300 phone calls and emails from Santa Monica water customers are received and responded to each year.

Depending on funding, additional conservation measures that are planned for implementation over the next five years include:

- **Water Conservation Programs Master Plan:** An overall master plan was developed to provide a more detailed water conservation framework and benefit/cost analysis of existing and proposed programs.
- **Marketing/Messaging Program for “Conservation as a Way of Life”:** A water conservation marketing campaign will be created with messaging aligned with the State’s “Making Water Conservation a California Way of Life.” Drought -related information will also become part of the messaging.

- Targeted Commercial Sector Programs: Restaurants, hotels, and medical facilities are the highest commercial users of water in the City. As such, outreach and support programs will be developed for one-on-one audits, evaluations, process recommendations, and rebate incentives for fixtures/devices to provide meaningful water savings in these specific sectors. An outside contractor may be used to develop and implement these programs.
- Performance Pays: This effort will leverage Metropolitan Water District's Water Savings Incentive Program for unique, innovative water conservation programs. Potential projects include pump pods for fire department trainings and cooling tower retrofits with new technology.
- School District Retrofits via Water Neutrality Direct Install Program: The scope of properties where the Water Neutrality Direct Install program retrofits fixtures will be expanded from residential and CII to include all City campuses of the Santa Monica-Malibu Unified School District.
- Irrigation System Audit and Repair: Much of the outdoor water waste occurs due to incorrect watering schedules programmed in customer's irrigation timers/controllers (i.e., overwatering). In addition, leaks and broken sprinklers heads go unnoticed as irrigation is typically run at night and not observed. This potential program will utilize a contractor to provide extensive outdoor audits and make necessary timer adjustments and simple repairs to save water.

2.2.1.2 Unconstrained Demand

The CWC requires water suppliers to estimate the current year's unconstrained demand as part of the AWSDA. Unconstrained demand is water demand absent any water supply or demand restrictions (e.g., voluntary or mandatory conservation). Water suppliers then use the current year unconstrained demand, while also considering other factors such as weather and population growth, to project demand for the twelve-month period following the July 1st AWSDA deadline (i.e., July 1 to June 30).

Table 2-3 summarizes the current year and projected year unconstrained demands as well as constrained demands, derived by subtracting an estimated 20% conservation savings. This 20% reduction is contributed to water conservation activities, which the City has consistently achieved or exceeded since 2014. Constrained demand for the current year is included from Table 2-2.

Table 2-3. Current Year and Projected Year Demands (Potable)

	Current Year Unconstrained January – December 2024 (AF)	Projected Year Unconstrained June 2025 – July 2026 (AF)	Current Year Constrained January – December 2024 (AF)	Projected Year Constrained June 2025 – July 2026 (AF)
Single Family Residential	2,895	3,185	2,316	2,548
Multi-Family Residential	5,354	5,705	4,283	4,564
Industrial/Commercial	2,860	2,829	2,288	2,263
Institutional	328	342	262	274
Landscape Irrigation	527	560	421	448
Fire Service	10	5	8	4
Water Loss	-	-	-	-
<i>Demand</i>	<i>11,974</i>	<i>12,626</i>	<i>9,578</i>	<i>10,101</i>

The City used a conservative approach for the projected year demands, as the intent of the AWSDA and requirements of the CWC are to ensure urban water suppliers are able to maintain reliable water supplies for a projected dry year. Constrained demands for the projected year (July 1, 2025 through June 30, 2026) for all categories were calculated using averages of previous years’ (2020-2024) constrained demand. This projection ensures the City is prepared for a high demand coupled with a dry year (seen in 2020-2022), while accurately reflecting recent usage (seen in 2024).

As temperatures continue to rise due to climate change, California is likely to experience warming by 2 degrees Fahrenheit or more by 2040. Higher temperatures are likely to result in increased water use from year to year.

2.2.1.3 Recycled Water Demand

The City has a dedicated recycled water system that provides service to 30 metered locations. The primary use of recycled water is for landscape irrigation, but it is also used for street sweeping, sewer jetting, and for lavatories at two facilities. With the implementation of the City’s recycled water ordinance, projected water demand is expected to increase over the coming year as new developments requiring recycled water

come online. The SWIP was completed in November 2022, which can produce up to 1,650 acre-feet per year of advanced treated recycled water. Due to advanced water quality testing for a groundwater replenishment permit from the SWRCB, Regional Water Quality Control Board, the City was unable to serve advanced treated recycled water from the SWIP for non-potable reuse until December 2023. The City plans to implement groundwater recharge operations using advanced treated recycled water from SWIP beginning in summer 2025. Table 2-4 tabulates the current year and projected year demands for advanced treated recycled water.

Table 2-4. Current Year and Projected Year Demands (Recycled Water)

	Current Year January - December 2024 (AF)	Projected Year July 2025 - June 2026 (AF)
Non-Potable Reuse	54	65
Aquifer Recharge (Direct Injection) ¹	0	320
Total Demand	54	385

¹Aquifer injection estimated to begin in April 2025.

2.2.2 Water Supply

The City currently purchases imported water from MWD to supplement its local water supplies. The City is one of 26 retail agencies served by MWD and receives imported water at two locations: the Arcadia WTP and the Charnock WTP. Both connections are 24 inches in size and are capable of serving 100% of the City’s potable water needs. The City’s Tier 1 imported water supply limit from MWD has been 7,406 AFY since 2016, and the City has been well under this limit in the past 10 years since the Charnock Well Field Restoration Project was completed in 2010 that restored local groundwater supplies. Additional MWD supply beyond the Tier 1 limit is also available to the City at a higher Tier 2 water supply rate.

The California Water Code requires AWSDAs to evaluate water supply reliability for the current year and one dry year. Relative to previous years, the local groundwater supply in 2024 was lower than average. The lower local production was a result of two factors. First, Santa Monica 4 (SM-4), the highest producing well in the City’s second largest producing groundwater aquifer, the Olympic Well Field, was taken offline due to operational issues. The other factor that contributed to lower groundwater supply in 2022, 2023, and 2024 was the Arcadia WTP temporarily being taken offline during construction of the Arcadia WTP Expansion Project. The Arcadia WTP is the City’s primary drinking water treatment

facility that treats local groundwater supplies. The expansion project will upgrade the Arcadia WTP to improve production efficiency from 82% to 90% or more and increase the treatment capacity from 11 million gallons per day (MGD) to a maximum 13 MGD. This project is scheduled to be completed by summer 2025.

To assess supplies under a single dry year (drought year), the City used the available water supply estimate from the drought risk assessment performed as part of the 2020 Urban Water Management Plan. The drought risk assessment projected that under a single, worst-case dry year, the City's local groundwater supply was approximately 6,755 AF, which equates to the lowest five-year running average for the City's water supply from 2010 to 2020. The 2010-2020 time period was chosen because it is after the City completed the Charnock Well Field Restoration Project in 2010 and is more representative of current operating conditions (e.g., available groundwater supply and annual MWD imported water use).

2.2.2.1 Existing Infrastructure Capabilities and Plausible Constraints

In addition to evaluating water supply reliability for the current year and one dry year, the California Water Code also requires suppliers to consider existing infrastructure capabilities and plausible constraints. As previously mentioned, construction will be occurring at the City's Arcadia WTP through summer 2025. However, any construction related shutdowns will not impact the Projected Year calculations, since construction will cease prior to July 2025.

2.2.2.2 Regulatory Considerations

Over 20 years ago, Methyl tert-Butyl Ether (MTBE) and Tert-Butyl Alcohol (TBA), compounds once used as gasoline additives, were detected in three of the Charnock Sub-basin wells. These contaminants shutdown production from the Charnock Sub-basin, the City's largest groundwater supply, until the completion of the Charnock Well Field Restoration Project. The treatment from this project uses Granular Activated Carbon (GAC) filtration, from coconut shells, to successfully treat MTBE and TBA concentrations to levels well below the Maximum Contaminant Level of 5 ppb. As a part of the Charnock Well Field Restoration Project, additional treatment processes were also added at the Arcadia WTP including greensand filtration, RO, and decarbonation to provide multi-barrier treatment for the local groundwater.

More recently in April 2019, the State Water Resources Control Board (SWRCB) investigated source water wells in California most vulnerable to Per- and polyfluoroalkyl substances (PFAS) contamination. This included those near airports and landfills, and later those near secondary sources of PFAS activities. The SWRCB did not require Santa Monica to sample its sources. However, the City proactively sampled the City's Drinking Water sources, and Perfluorooctanoic acid was detected in the Olympic Well Field. This compound was in addition to 14 other synthetic organic constituents of potential concern, including trichloroethylene, tetrachloroethylene, 1,4-dioxane, and 1,2,3-Trichloropropane, identified

in the Olympic subbasin as a result of historical industrial contamination. The City is required to demonstrate compliance with the SWRCB, Division of Drinking Water Process Memo 97-005-R2020 – *Revised Guidance for Direct Domestic Use of Extremely Impaired Sources* to utilize the Olympic subbasin as a drinking water source. As part of maintaining compliance, the Arcadia WTP expansion will also include the new Olympic Wellfield Restoration Project to remove these constituents through ultraviolet-advanced oxidation processes and two-stage GAC and amend the City’s drinking water permit to perform continuous wellfield monitoring for these substances, including PFOA.

In May 2017, the Cities of Santa Monica, Los Angeles, Beverly Hills, and Culver City, and Los Angeles County signed a Memorandum of Understanding to form the Santa Monica Basin Groundwater Sustainability Agency (SMBGSA). The SMBGSA is tasked with implementing an ongoing sustainable groundwater management program for the SMB in conformance with California’s Sustainable Groundwater Management Act (SGMA) of 2014. A key piece of this program is the development of a Groundwater Sustainability Plan (GSP), which was approved by the SMBGSA in January 2022.

The GSP is the first comprehensive groundwater assessment and management plan specific to the SMB, which has been identified as a medium-priority groundwater basin by the California DWR. The SMBGSA is required to provide a description of the sustainable management criteria that will be used for the basin. As part of the GSP, sustainable management criteria (e.g., sustainable yield) and interfaces with neighboring groundwater basins (e.g., West Coast Basin and Central Basin) for the SMB was assessed. Projected groundwater levels calculated using a calibrated groundwater model indicate that at a production rate of 9,000 AFY, groundwater elevations will decline and recover based on the volume of recharge available in the SMB. The first GSP was submitted to the California Department of Water Resources on January 2022 and approved on October 2023. The City has already begun implementing projects to aid in maintaining sustainability of the SMB, including groundwater recharge with advanced treated recycled water from SWIP, advancing monitoring wells to eliminate data gaps and refine groundwater modeling efforts, and expanding water conservation programs to permanently reduce water demand.

2.2.2.3 Projected Available Water Supply

Current year and projected year supply used for the AWSDA are provided in Table 2-5. The current year supply includes shutdowns related to local groundwater supply during the Arcadia WTP Expansion Project in 2024. Due to construction shutdowns, local groundwater production was limited, and the City purchased larger quantities of water from MWD. Under normal operating conditions, the City does not purchase Tier 2 water from MWD, however due to the length of the shutdowns in 2024, Tier 2 water was required.

The projected year water supply includes existing infrastructure capabilities, plausible constraints, and regulatory considerations described above. The projected year local groundwater supply is equated to the water supply from the drought risk assessment (6,755 AF), to account for a severe drought scenario. The water supply from the drought risk assessment is the lowest five-year running average for water supply from 2010 to 2020. As a conservative approach, the projected supply assumes that only MWD’s Tier 1 supply is available.

Table 2-5. Current Year and Projected Year Potable Supply

	Current Year January – December 2024 (AF)	Projected Year July 2025 – June 2026 (AF)
Local Groundwater	2,863	6,755
MWD Tier 1	7,406	7,406
MWD Tier 2	599	-
Total Supply	10,868	14,161

2.2.2.4 Projected Available Recycled Water Supply

In 2001, the City began operating the SMURRF to treat dry-weather urban runoff that was previously discharged into Santa Monica Bay from the Pier and Pico-Kenter storm drains. The SMURRF is operated by Santa Monica, though operating costs and revenues are shared jointly with the City of Los Angeles, as a Best Management Practice facility. Treated water from SMURRF is sent through a City-wide recycled water distribution system that serves parks, medians, Woodlawn Cemetery, and dual-plumbed buildings for toilet flushing. The non-potable water is also used by City operations for street sweeping, sewer jetting, and pressure washing. Due to upgrades being made at SMURRF, the facility is currently offline.

In addition to SMURRF, the City began using the SWIP Advanced Water Treatment Facility (AWTF) to supply non-potable customers in December 2023. The SWIP AWTF is the City’s first wastewater treatment facility and is able to produce up to 1 MGD, on average, of advanced treated recycled water (approximately 10% of the City’s water supply).

Construction was completed in 2022; however, the City opted to complete advanced water quality testing to obtain a groundwater replenishment permit from the SWRCB, Regional Water Quality Control Board, which was successfully obtained in December 2023.

Currently, advanced treated recycled water is being used to meet non-potable reuse demands. The advanced treated recycled water will also be used to augment the groundwater aquifer at the Olympic Well Field via direct aquifer injection beginning in April 2025. The City is also exploring the potential for direct potable reuse in the future following SWRCB implementation of DPR regulations in December 2023. Table 2-6 summarizes the current year and projected year recycled water supplies available to the City.

Table 2-6. Current Year and Projected Year Recycled Water Supply

	Current Year January – December 2024 (AF)	Projected Year July 2025 – June 2026 (AF)
SMURRF ¹	0	Up to 560
SWIP	533	Up to 1,120
Total Recycled Supply	533	Up to 1,680

¹Offline due to construction.

3 Supply and Demand Assessment Results and Recommendations

Results of the AWSDA comparing anticipated unconstrained demand and total water supply for the projected year are summarized in Table 3-1. A shortage is indicated by a negative number/percentage, while a surplus is indicated by a positive number/percentage.

Table 3-1. Assessment Results without Water Shortage Response Actions

	Total (AF)
Anticipated Unconstrained Demand	12,626
Anticipated Total Water Supply	14,161
Surplus/Shortage w/out Water Shortage Response Actions ¹	2,525
% Surplus/Shortage w/out Water Shortage Response Actions	12%
State Standard Shortage Level without Water Shortage Response Actions	Level 0 (No Shortage)

¹ Shortage is indicated by a negative number/percentage; surplus is indicated by a positive number/percentage.

Results indicate that without water shortage response actions, a 12% water supply surplus is projected for the next year. A 12% water supply surplus indicates a State's Standard Shortage Level 0 (No Shortage) per the WSCP where necessary actions (e.g., water conservation) are not required to be taken to enhance the reliability and resiliency of the available water supply. However, the City recommends staying in a Stage 2 shortage, where conservation is required and a key component to meet the City's goal of reducing its reliance on imported water supplies as discussed further below.

3.1 RECOMMENDED WATER SHORTAGE RESPONSE STAGE

The City's WSCP utilizes the same water shortage levels as the State and includes water shortage response actions for each stage. The City's water shortage stages and associated water use reduction targets from the City's WSCP are provided in Table 3-2.

Table 3-2. Water Shortage Stages and Reduction Targets

Water Shortage Stage	Shortage Level	Water Shortage Condition	Water Use Restrictions	City-wide Use Reduction Goal
Stage 1	≤10%	Minimal	Voluntary	10%
Stage 2 ¹	10-20%	Moderate	Mandatory	20%
Stage 3	20-30%	Significant	Mandatory	30%
Stage 4	30-40%	Severe	Mandatory	40%
Stage 5	40-50%	Critical	Mandatory	50%
Stage 6	>50%	Catastrophic	Mandatory	>50%

¹Recommended Water Shortage Stage

The recommended Stage 2 Water Shortage Stage includes mandatory water use restrictions with a City-wide use reduction goal of 20% compared to the 2013 water use baseline. Water shortage conditions and actions implemented as part of a Stage 2 Water Shortage Stage are provided in Table 3-3 and Table 3-4.

Table 3-3. Summary of Water Shortage Stages and Conditions

Water Shortage Stage	Water Shortage Level	Water Shortage Condition
Stage 1	Up to 10%	Using more than 50% of MWD Tier 1 allowance for imported/purchased water and/or MINIMAL decrease in local ground water supply
Stage 2	Up to 20%	Using more than 50% of MWD Tier 1 allowance for imported/purchased water and/or MINIMAL decrease in local ground water supply
Stage 3	Up to 30%	Using more than 70% of MWD Tier 1 allowance for imported/purchased water and/or SIGNIFICANT decrease in local ground water supply.
Stage 4	Up to 40%	Using more than 80% of MWD Tier 1 allowance for imported/purchased water and/or ADVANCED decrease in local ground water supply.
Stage 5	Up to 50%	Using more than 90% of MWD Tier 1 allowance for imported/purchased water

Water Shortage Stage	Water Shortage Level	Water Shortage Condition
		and/or SEVERE decrease in local ground water supply.
Stage 6	> 50%	Exceeding MWD Tier 1 allowance for imported/purchased water and/or CATASTROPHIC decrease in local ground water supply.

Table 3-4. Summary of Stage 1 and Stage 2 Water Shortage Response Actions

Water Shortage Stage	Action	Estimated Reduction
Stage 1	Offer Water Use Surveys	1% - 2%
Stage 1	Provide Rebates on plumbing fixtures and devices	1% - 2%
Stage 1	Provide Rebates for landscape irrigation efficiency	1% - 2%
Stage 1	Provide Rebates for Turf Replacement	1% - 2%
Stage 1	Landscape – Restrict or prohibit runoff from landscape irrigation	1% - 2%
Stage 1	Landscape – Limit landscape irrigation to specific times	1% - 2%
Stage 1	CII – Restaurants may only serve water upon request	1% - 2%
Stage 1	Water Features – Restrict water use for decorative water features, such as fountains	1% - 2%
Stage 1	Pools and Spas – Require covers for pools and spas	1% - 2%
Stage 1	Other – Customers must repair leaks, breaks, and malfunctions in a timely manner	1% - 2%
Stage 1	Other – Additional conservation measures by City staff	1% - 2%
Stage 1	Other – Irrigation Association’s Best Management Practices for all City landscaped areas	1% - 2%
Stage 1	Other – Immediate notification by City staff of any leaks seen on City property or private property	1% - 2%

Water Shortage Stage	Action	Estimated Reduction
Stage 1	Other – Immediate notification by City staff of any leaks seen on City property or private property	1% - 2%
Stage 2	Other – Continued implementation of Stage 1 actions	10% - 20%
Stage 2	Other – Implement Water Use Allowances (WUAs) for a 20% reduction from the amount of water used in 2013.	10% - 20%
Stage 2	Expand Public Information Campaign	1% - 10%
Stage 2	Increase Water Waste Patrols	1% - 10%

The goal of water shortage response actions is to reduce demand and enhance the reliability of the City’s water supply. For a Stage 2 Shortage, the City’s WSCP identifies a list of actions that aim to reduce water demand in the City by 20%. The City has been in a Stage 2 water shortage stage since 2014 and has consistently achieved 20% reductions in water demand. The estimated reduction in water demand resulting from Stage 2 actions for the projected year is approximately 2,417 AF. This reduction is the difference between the projected year’s unconstrained and constrained demands (see Table 2-4).

In addition to water demand reduction, water supply augmentation may also be used as a water shortage response action. The City plans to use Tier 2 imported water supply from MWD as a supply augmentation action during prolonged, planned local groundwater supply outages (e.g., shutdown of the Arcadia WTP or the Charnock Well Field). As previously discussed, the Arcadia WTP was temporarily offline for construction and during these outages, additional water from MWD, beyond the City’s Tier 1 allocation was purchased to supplement the City’s supply. The proposed supply augmentation budget allowed from the MWD Tier 2 is 5,600 AF, which is equivalent to the current year’s highest six consecutive month total supply and coincides with how long planned outages in local water supplies may last (e.g., construction at the Arcadia WTP or replacement of groundwater wells). Tier 2 water is not listed as a water shortage response action in Table 3-4 because it would only be used in certain circumstances (e.g., planned construction) and is not tied to customer water usage. The WSCP will be revised as part of the 5-year review period in 2025 to reflect the addition of supply augmentation as a water shortage response.

The City recommends staying In a Stage 2 Shortage for a variety of reasons:

- First, the Water Conservation Act of 2009 (Senate Bill X7-7) required water

suppliers in California to decrease urban gallons per capita water (GPCD) use by 20% by the year 2020. The City met this goal (target was 123 GPCD; actual was 103 GPCD), and by staying in a Stage 2 Shortage, the City would be able to continue meeting this requirement.

- Second, if the Stage 2 Shortage was lifted, water demand could increase due to the public's perception of relaxed conservation requirements, thus increasing the purchase of imported water, and difficult to restore conservation efforts and practices when it is needed again. This could impact water rates and potentially lead to a heavier burden on the City's rate payers.
- Third, while California has seen heavy rain the past few winters, this does not completely alleviate the long-term impacts of the most recent drought or the state's chronic water supply challenges. Forecasters at the National Oceanic and Atmospheric Administration say that the La Niña weather pattern has a 59% chance of persisting from February – April. The last La Niña event contributed to the state's three straight dry years from 2020 to 2023. While the rain events have been beneficial for the State Water Project (imported water from Northern California), Southern California's other major imported water supply from the Colorado River has yet to recover from over 20 years of drought conditions, and studies suggest the Colorado River may not recover in our lifetime.
- Lastly, rulemaking to Make Conservation a California Way of Life will establish water use efficiency goals for urban retail water agencies and likely result in increasing water use reduction targets. By maintaining current water conservation efforts will help the City meet future water reduction goals.

Staying in a Stage 2 Water Shortage is prudent for the City in order to maintain demand reduction so that we are prepared for the next inevitable, extended dry period.

The severe drought California has faced since 2020, paired with the heavy rains of 2023, 2024, and thus far in 2025, showcase that climate change results in greater variability and volatility of weather patterns. Investments in the City's water supply resiliency are necessary to mitigate against these extreme weather events. The SWIP and Arcadia WTP Expansion are examples of the City's efforts in adapting the City's water portfolio to climate change impacts. The SWIP leverages stormwater, when it is available during wet weather events, and municipal wastewater to produce purified water to recharge local groundwater aquifers. The Arcadia WTP will improve production efficiencies to produce additional drinking water without increasing local groundwater pumping through first-of-its-kind, high-efficiency Flow Reversal RO technology. Both projects are expected to be online within the projected year. Coupled with water conservation activities and AMI, these components represent the culmination of the 2018 SWMP to improve water resiliency, self-sufficiency, and sustainability.

The long-term vision of the City is to center on water conservation, per CA Executive Order B-37-16: Making Water Conservation a California Way of Life. Local conservation goals are detailed in the City's Water Conservation Master Plan. Implementing cutting edge projects, along with great water conservation efforts from the public, the City is able to prepare for the future. Table 3-5 highlights the benefits of remaining in a Stage 2 Shortage representing a 32% surplus in water supply.

Table 3-5. Assessment Results with Stage 2 Water Shortage Response Actions

	Total (AF)
Projected Year Supply (Local Groundwater and MWD Tier 1 Supply)	14,161
Total Supply	14,161
Projected Unconstrained Demand	12,626
Benefit from Stage 2 Water Demand Reduction Actions	(2,525)
Constrained Demand	10,101
Revised Surplus w/ Water Shortage Response Actions (Total Supply – Constrained Demand)	4,060
Revised % Surplus w/ Water Shortage Response Actions	32%

3.2 ONGOING REASSESSMENTS

The City has been providing monthly water production and conservation reports to the SWRCB since July 2014 to comply with the statewide drought emergency water conservation regulation. While the emergency regulation expired in November 2017, the City continues to report voluntarily. Monthly reports became mandatory again in October 2020 after the SWRCB adopted a new regulation on Monthly Urban Water Conservation Reporting. The new reporting regulation requires monthly reporting of key elements and additional information during water shortages. The reports, compiled by the City, include information on residential water use, total potable water production, measures implemented to conserve water and improve efficiency, and local enforcement actions. The reports are submitted to the SWRCB's Drinking Water Information Clearinghouse online portal.

Over the next few years, the City will also be upgrading its water meters with AMI, which will allow real-time water demand monitoring as opposed to the current 60-day meter reading cycle. Past studies have shown AMI to reduce water demand by as much as 5-7% of the total water supply. The City is completing three master planning documents: a

Water Master Plan, a Water Conservation Master Plan, and a Recycled Water Master Plan. These master plans will help identify water system improvements over the next ten years, refine the implementation of water conservation measures to further reduce water demand, and plan for the expansion of the recycled water system.

On the water supply side, the City's WRD provides monthly water production reports to interested parties within the City. The reports include information on well production, finished local water production and imported water purchased. Staff will continue monthly monitoring of water supplies to assess water shortage conditions.

On the recycled water supply side, the future recycled water supply capability far exceeds projected demand. Through 2026, it is anticipated that the SMURRF and SWIP AWTF will operate to meet non-potable demand and aquifer recharge demand at only one injection well. To maximize the use of advanced treated recycled water, the City is constructing one additional injection well by 2026 and analyzing potential sites for future injection wells. Finally, the City is exploring the potential for direct potable reuse following implementation of regulations by the SWRCB in December 2023 to further enhance the reliability and resiliency of the City's water supply portfolio.

As an adaptive management plan, the WSCP will be refined as part of the next Urban Water Management Plan revision to ensure it continues to effectively address potential water shortage conditions. On an ongoing basis, using the reports and compliance tracking process described above, any necessary changes to the WSCP will be identified. In addition, as a part of annual demand and supply assessments, the WSCP will be reviewed with refinements incorporated as needed.