



City of Santa Barbara Draft Water Supply Management Report 2022 Water Year (October 1, 2021 – September 30, 2022)

Water Resources Division, Public Works Department
December 6, 2022

INTRODUCTION

The City of Santa Barbara operates the water utility to provide water for its citizens, certain out-of-City areas, and visitors. Santa Barbara has an arid climate, so providing an adequate water supply requires careful management of water resources. The City has a diverse water supply portfolio, including local reservoirs (Lake Cachuma and Gibraltar Reservoir), groundwater, State Water Project water, desalination, and recycled water. The City also considers water conservation an important tool for balancing water supply and demand. The City's Enhanced Urban Water Management Plan (EUWMP) was adopted by City Council on June 29, 2021. The EUWMP details the City's water supply and management strategy for the next 30 years.

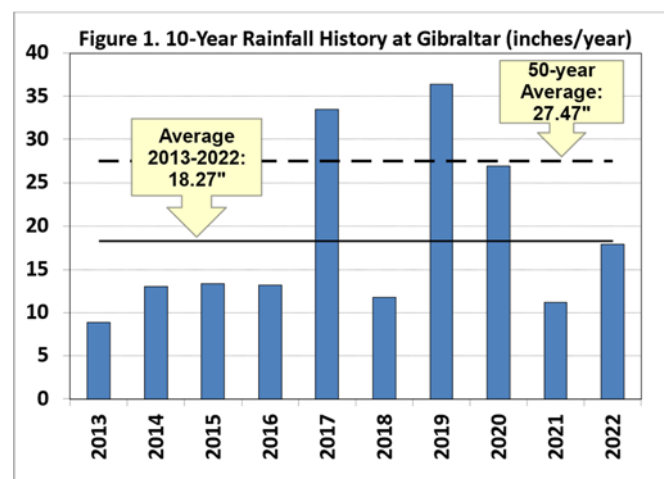
This annual report summarizes the following information:

- The status of water supplies at the end of the water year (WY) (September 30, 2022)
- Drought outlook
- Water conservation and demand
- Major capital projects that affect the City's ability to provide safe clean water
- Significant issues that affect the security and reliability of the City's water supplies

Appendix A provides supplemental detail. Additional information about the City's water supply can be found on-line at: www.SantaBarbaraCA.gov/Water.

WATER SUPPLIES

The City has one of the most diverse water supply portfolios in the state, including local surface water; local groundwater (which includes water that seeps into Mission Tunnel); State Water; desalinated seawater; and recycled water. Typically, most of the City's demand is met by local surface water reservoirs and recycled water, and is augmented as necessary by local groundwater and State Water. In February 2021, City Council changed its policy regarding the use of desalinated water from strictly a drought supply to a supply that can be used to address drought preparedness, response, and recovery.



The City's local surface water comes from Gibraltar Reservoir and Lake Cachuma, both of which are located in the upper Santa Ynez River watershed. The inflow to these reservoirs

is rainwater, so rainfall data for Gibraltar Reservoir has important water supply management implications. Figure 1 shows rainfall for the past ten years as compared to the 50-year average. Additional historic information is included in Appendix A. Runoff generated by average rainfall is generally enough to fill Gibraltar; however, it typically takes above-average rainfall to produce any significant inflow to Cachuma. Rainfall in the Santa Ynez River watershed during 2022, as measured at Gibraltar, was 65% of 50-year rainfall average, with the majority of rain falling during a few storms in October, December, and March. At the end of WY 2022, Lake Cachuma and Gibraltar were at approximately 52% and 21% respectively of their total capacities.

To enhance rainfall, the City has historically participated in the cloud-seeding program administered by the County of Santa Barbara. Cloud seeding only works when there are storm events. The cloud-seeding program in the Santa Ynez River watershed was suspended in 2017 due to Rey, Whittier, and Thomas Fire impacts. There were concerns that intensified rainfall would generate more soil erosion in the burn areas, and result in sediment accumulation in Lake Cachuma. The cloud-seeding program was restarted was restarted and fully funded in fiscal year 2022 and is planned to continue in fiscal year 2023. Table 1, below, summarizes the status of the City’s water supplies at year-end.

Table 1. End of Year Status of City Water Supplies	
The Water Year runs from October 1 through September 30. All data is as of September 30, 2022.	
Lake Cachuma	Total Capacity: 184,121 AF (2013 survey for 750’ elevation) End of Year Storage: 65,436 AF (36% of Total Capacity) The City’s share of the Cachuma Project’s normal annual entitlement is 8,277 AF. The City’s WY 2022 allocation was 70%. Actual City use in WY 2022 was 4,495 AF. Total remaining carryover for the City as of September 30, 2022 was 19,238 AF.
Gibraltar Reservoir	Total Capacity: 4,693 AF (August 2021 survey) End of Year Storage: 984 AF (21% of Total Capacity) Gibraltar Reservoir typically fills and spills two out of every three years. Gibraltar spilled four times since May 2011. The most recent spill was March 20, 2020. Total deliveries from Gibraltar in 2022 were 1,626 AF. Gibraltar is currently nearly empty and ready to capture any rain that falls in the winter of 2022/23. The projected long-term average supply from Gibraltar is 4,330 AF under Pass Through Operations ¹ .
Mission Tunnel	Groundwater that seeps into Mission Tunnel is an important part of the City’s water supply. Mission Tunnel provided 718 AF in WY 2022, about half of the long-term average of 1,125 AFY ² .
Groundwater	The City conjunctively manages its groundwater with its surface water supplies, providing for groundwater replenishment during wet years. Groundwater levels continue to be low due to drought conditions in previous years. After heavy groundwater pumping during the drought, the City focused on resting its groundwater basins in WY 2020, WY 2021 and for most of WY 2022 to help them recover to pre-drought levels. In response to continued dry conditions, the City began pumping Storage Unit 1 in the summer of 2022, for a total of 203 AF of groundwater in WY 2022.
State Water Project	The City has a 3,300 AF “Table A” allotment (with drought buffer), subject to availability. In 2022, the SWP allocation was 5%, or 165 AF for the City. The Coastal Branch and Santa Ynez Extension of the State Water Project (SWP) are in place to deliver the City’s water into Lake Cachuma. The City used 384 AF from the SWP in WY 2022. The City exchanged 139 AF with Santa Ynez River Water Conservation District, Improvement District No. 1 (ID#1) pursuant to the Exchange Agreement.

¹ Stetson, 2013. *Hydrologic Analysis of the Pass Through Operations at Gibraltar Reservoir*. Prepared for the City of Santa Barbara. July 2013.

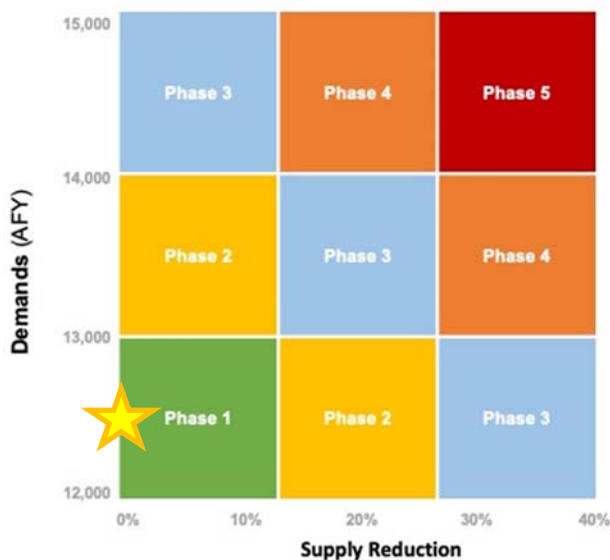
² SWRCB et al., 2011. *Final Environmental Impact Report for the Cachuma Project Water Rights Hearings*. Prepared for the State Water Resources Control Board. December 2011.

Desal	The desalination plant was reactivated in May 2017 and serves as a drought preparedness, response, and recovery supply for the City. It produced and delivered 2,874 AF of water to the City's distribution system in 2022, allowing the City to use less water from Lake Cachuma and store it as carryover water in preparation for the next dry period.
Recycled Water	The City's recycled water system serves parks, schools, golf courses, other large landscaped areas, and some public restrooms. Demand from the system was 981 AF, or 8.5% of the total customer water demand, plus 297 AF of process water at El Estero Water Resource Center (El Estero). In 2022, the recycled system demands were supplemented with 21 AF of potable blend water.

MONITORING WATER SUPPLY AND DEMAND

In June 2021, City Council adopted the 2020 Enhanced Urban Water Management Plan (EUWMP). The EUWMP evaluates the City's water supplies for adequacy and reliability and provides a long-term view of the City's water supply management strategy for the next 30 years. Analysis of the City's current water supply portfolio suggests the City currently has adequate supplies to meet demands, even under reduced supply scenarios, except during extended periods of drought when supplementary supplies or extraordinary conservation are needed. A triple-bottom line analysis was performed to measure the performance of a diverse range of possible future water supply portfolios against social, environmental, and financial criteria. Results of this analysis indicate expanding the City's Charles E. Meyer Desalination facility from a production capacity of 3,125 acre-feet per year (AFY) to 5,000 AFY is the City's best performing new supply when balancing social, environmental, and financial criteria as part of an adaptive water management approach. The timing for expanding the desalination plant will depend on the pace of demand growth and the ongoing availability and reliability of existing supplies. The EUWMP outlines an Adaptive Implementation Plan (Figure 2) that prioritizes water conservation, leverages the City's current supplies, and identifies supply and demand triggers and corresponding next steps to guide the City in adapting to future changes in water supply and demand conditions. The yellow star in Figure 2 represents the City's supply and demand for WY 2023. Currently in Phase 1, staff is monitoring supplies and demands, and will notify Water Commission and City Council when it is time to move into Phase 2 and start planning for a new supply (expansion of the desalination facility).

Figure 2. Adaptive Management Plan

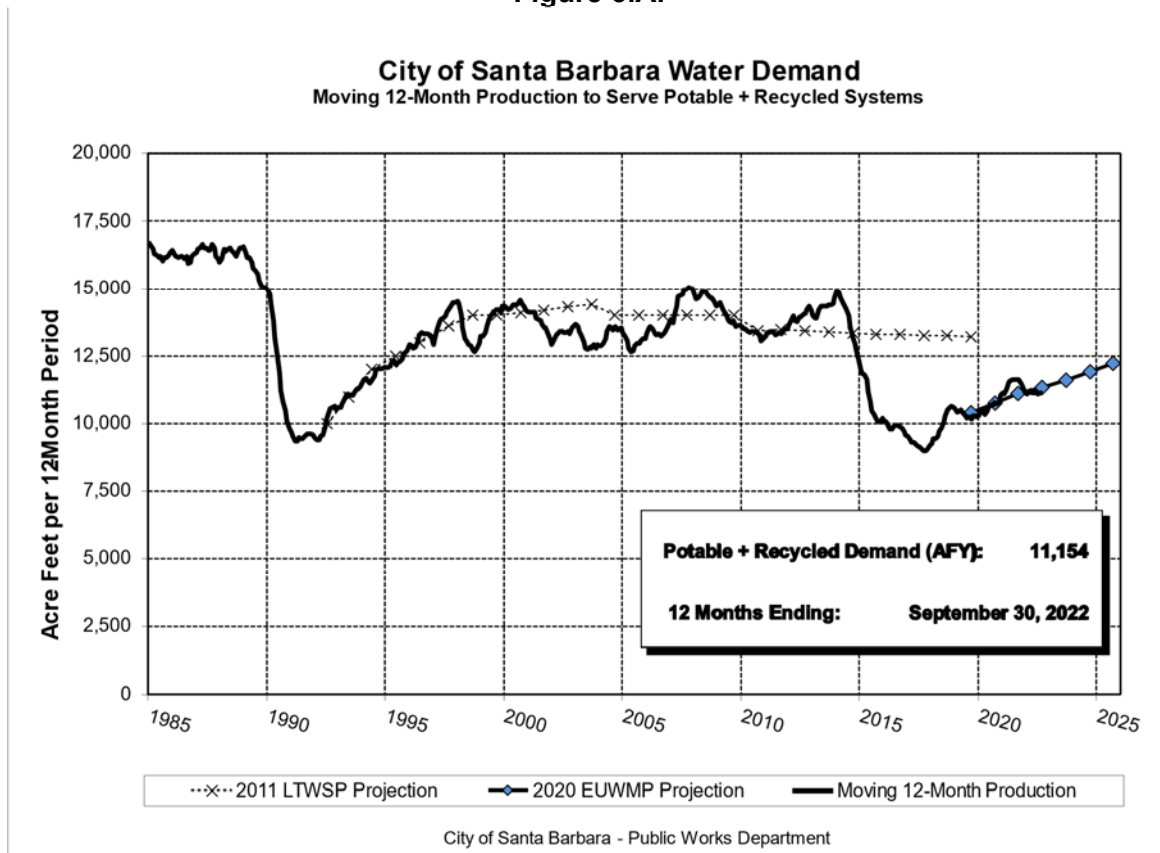


Implementation Phases

1. Existing Conditions:
 - Monitor
 - Implement recommendations
2. Begin planning for a new supply.
3. Implement new supply
4. Begin planning for additional new supplies
5. Implement additional new supplies

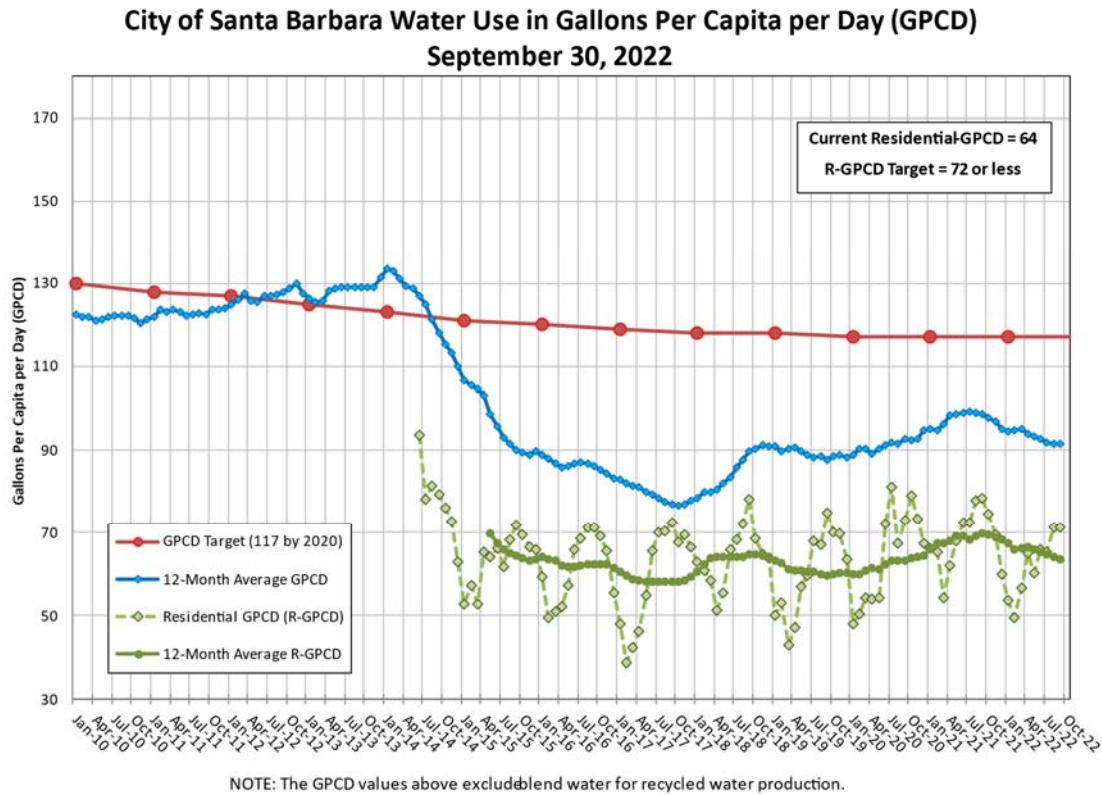
Water demand has historically been measured by total water production, which is the total amount of supply from all sources needed to serve demands on the potable and recycled distribution systems. Figure 3.A. illustrates historical demands based on total water supply produced, including recycled water. Future demand projections from the EUWMP are shown in blue. Total water production was 11,154 AF for 2022 (excluding water produced for El Estero’s process demands). Past State requirements for water conservation established a “20% by 2020” target based on gallons used per capita per day (GPCD) for potable water use. Figure 3.B. shows monthly potable water GPCD water use values, as well as a moving 12-month GPCD average. Average usage for 2022 was 91 GPCD - significantly lower than the City’s 2020 target of 117 GPCD. The State is currently developing new water use targets for water suppliers that will include residential GPCD (R-GPCD), as part of the state’s 2018 “Making Water Conservation a California Way of Life” legislation³. The City’s R-GPCD has been added to the chart in green. The City’s 12-month average R-GPCD for 2022 was 64-GPCD. In both charts, demands show a decline beginning in 2014 in response to the Stage 2 and 3 drought conditions that instituted mandatory reductions of water use. GPCD and system production increased slightly over the course of WY 2022 compared to WY 2020 as customer use started to rebound after drought restrictions were lifted.

Figure 3.A.



³ 2018 Legislation on Water Conservation and Drought Planning Senate Bill 606 (Hertzberg) and Assembly Bill 1668 (Friedman)

Figure 3.B.



DROUGHT OUTLOOK

Assessment of the City’s water supplies in the 2020 EUWMP indicated the biggest threat to the City’s water supply reliability is prolonged drought. Lake Cachuma is the City’s primary source of surface water, and its storage level is the most important indicator of drought impacts. The maximum storage capacity of Lake Cachuma is nearly 193,000 AF. Figure 4 shows a recent history of storage levels at Lake Cachuma, which reached historic lows in 2016, recovered to about 50% capacity in WY 2017, and then hovered around 75% of capacity until the end of WY 2021, when storage again dropped to nearly 50% capacity. Cachuma storage was at 36% of capacity at the end of WY 2022. The severe drought period of 1986-1993 is also shown for comparison. Around July each year, the U.S. Bureau of Reclamation (Reclamation) determines the Member Unit’s allocation for the upcoming water year. In the past, this determination was based primarily on current lake storage levels and the amount of available unaccounted for water, or inflows that had not yet been allocated to a Cachuma water use or user. In the past two years, the Reclamation has modeled projected lake storage and drawdown to determine the allocation, with modeling efforts assuming no new inflows and looking ahead two years. Cachuma Operation and Maintenance Board (COMB) staff and the Cachuma Member Units also model lake storage and try to work with Reclamation to determine an appropriate allocation based on the best available data. The COMB lake elevation and storage model indicated a 15% allocation was appropriate for WY 2023; however, Reclamation chose to set the allocation at 0%.

Figure 4.

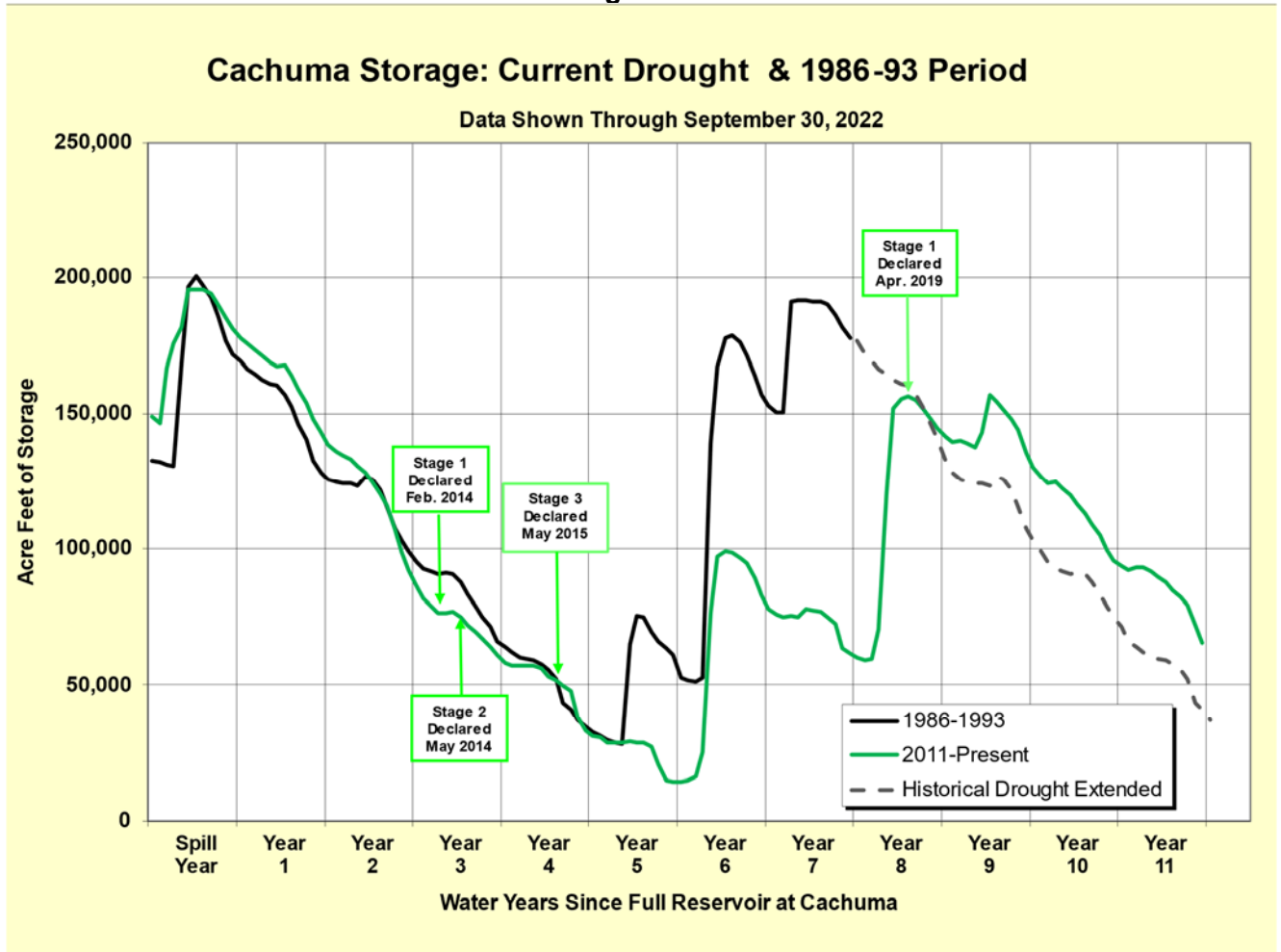
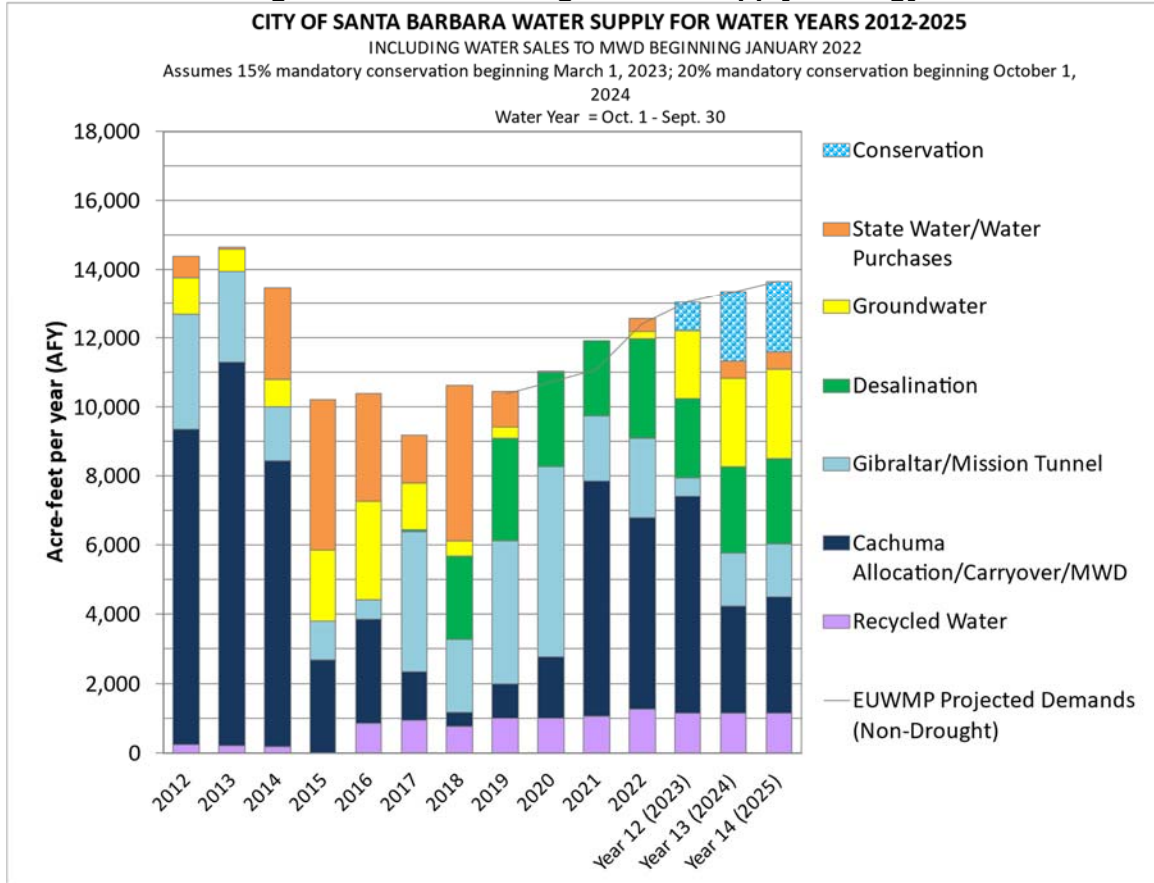


Figure 5 shows the current water supply strategy over a 13-year period. The first ten years reflect actual water supply, and the last three years reflect projected water supply assuming continued drought conditions. The supply strategy conservatively includes no additional inflows Lake Cachuma, only 1,000 AFY of supply from Gibraltar in WY 2024 and WY 2025, a zero percent allocation on the State Water Project in WY 2023, and a 15 percent State Water Project allocation in WY 2024 and WY 2025. The supply strategy also includes groundwater pumping from both Storage Unit 1 and the Foothill Basin, based on conservative estimates of available annual pumping capacity. The supply strategy reflects the management policies adopted in the 2020 EUWMP. The 2020 EUWMP addresses a new “historical drought of record” based on hydrological conditions from the most recent drought (2012-2019), with three additional drought years added to create a 10-year record drought.

Figure 5. Current Drought Water Supply Strategy



The City Council declared a Stage One Drought condition on February 11, 2014, Stage Two Drought condition on May 20, 2014, and Stage Three Drought condition on May 5, 2015. On December 6, 2016, the Stage Three Drought condition was amended to increase the City's water conservation target to a 40% reduction, based on local water supply conditions. On March 21, 2017, the Stage Three Drought condition was amended to decrease the City's water conservation target to a 30% reduction in response to winter 2017 rains, which filled Gibraltar Reservoir and increased storage in Lake Cachuma. City Council rescinded the Stage Three Drought condition on April 9, 2019 and adopted a Stage One Water Supply Condition in response to above average rainfall in winter 2019. Most recently, on June 21, 2022, the City Council implemented water conservation actions associated with a Stage Two Water Shortage Alert in response to California Governor Newsom's executive order declaring a statewide drought emergency and mandating that urban water supplies move to a higher level of drought response.

The City's 2021 Water Shortage Contingency Plan, adopted in June 2021, outlines the stages of drought and actions to achieve planned demand reductions. A Stage Three Water Supply Condition is the most critical drought-related stage. The City is currently in a Stage Two Water Shortage Alert and restrictions include: hoses are required to have automatic shut-off nozzles, no hosing down hard surfaces with potable water (unless for health and safety), automatic irrigation is prohibited between 8 am and 6 pm. In addition, there is a statewide ban of potable irrigation of non-functional turf grass at commercial, industrial, and institutional sites. The City continues to enforce its longstanding regulations prohibiting irrigation runoff, irrigation within 48 hours of significant rainfall, and failure to repair leaks. If the 2022/2023 winter yields continued drought conditions with below-average rainfall, City Council may enact a 15% mandatory conservation target as part of the Stage Two Water

Shortage Alert in spring of 2023 to reduce demands and stretch supplies. Should additional dry years continue, the 15 percent demand reduction in the spring of 2023, would be followed by a 20 percent demand reduction in WY 2024 onward as reflected in the current drought water supply strategy.

CITY WATER CONSERVATION PROGRAM

In accordance with the EUWMP and the Water Conservation Strategic Plan, the Water Conservation Program is operated to minimize the use of potable water supplies, implement the best management practices of the U.S. Bureau of Reclamation, and achieve compliance with State-mandated water conservation targets. Water conservation measures are evaluated for cost effectiveness based on the avoided cost of additional water supplies. Highlights of the City's Water Conservation Program include the following activities:

- **Free Water Checkups:** Checkups are requested by water customers to assist with evaluating indoor and outdoor water usage, finding leaks, and water efficiency recommendations. 961 free water checkups were provided in WY 2022, most of which were phone and virtual Water Checkups due to COVID-19 safety precautions.
- **Landscape Training:** Lectures and workshops geared toward homeowners and landscape professionals, many are offered in conjunction with horticultural organizations and local irrigation stores. Trainings pivoted to online Green Gardener classes and webinar-based classes including: Site Assessment 101, Rainwater Harvesting 101, Drip Irrigation, Sprinkler Systems, Irrigation Controllers, Checking for Leaks, and Water Wise Native Plants, with 177 participants in WY 2022.
- **Marketing and Outreach:** Continued implementation of regional outreach through the Countywide Regional Water Efficiency Program. Highlights from WY 2022 include: the 2022 WaterWise Garden Contest, countywide advertising about landscape transformations and irrigation repairs, and new Garden Wise TV show episodes.
- **Water Education Program:** Free take-home water efficiency kits and musical assemblies to highlight where the City's water comes from and how to conserve it. 835 students were reached in WY 2022.
- **Rebate Program Participation:** There were 42 high efficiency washing machine rebates, 74 mulch delivery rebates, and 444 Flume water system device rebates in WY 2022. Flume is a water-monitoring device that, in the event of high or constant water flows through the meter, alerts users via a Smartphone app.

CAPITAL PROJECTS

Staff continues work on a number of projects to improve the reliability and maintain quality of City water supplies:

- **Conveyance Pipeline (Desal Link):** This new pipeline will convey desalinated water from the City's desalination plant to the City's Cater Water Treatment Plant. Design of this project began in FY2019, and construction began 2021. Currently, about 85% of the pipe is in the ground, and the project should be complete in February 2023. The project will improve overall water system quality and provide the opportunity to convey desalinated water to the City's entire service area, as well as other South Coast agencies.

- **Desal Product Water Pump Station:** This pump station is being upgraded so that desalinated water can be conveyed to the Cater Water Treatment Plant via the newly constructed conveyance pipeline and repurposed existing transmission mains. Design for this project is complete, with construction at the plant anticipated to begin when long lead time equipment arrives in early 2024. Piping modifications at Cater will also be needed as the final step to convey desalinated water into Cater’s finished water reservoir. These modifications are in the design phase. The project will improve the overall water system quality and provide the opportunity to convey desalinated water City-wide and to other South Coast water agencies.
- **Alameda Well Water Line:** The Alameda Well Waterline Project will construct a new waterline to convey groundwater from the Alameda Groundwater Well to the Ortega Groundwater Treatment Plant for treatment, which will improve water quality and supply reliability for the City of Santa Barbara. This project is expected to be completed in the summer of 2023.
- **Aquifer Storage and Recovery Project:** In August 2021 the State Water Resources Control Board approved pilot testing of the City’s Aquifer Storage and Recovery (ASR) Project. The ASR project consists of injecting potable drinking water into the Foothill Groundwater Basin through San Roque well to replenish the aquifer and store water in wet years and recover the water from the basin in drier years. Injection and extraction tests identified the need for system repairs, which were completed in July 2022. The ASR pilot testing is currently on hold as the well is needed to produce groundwater to augment City water supplies. Staff will continue to monitor water supply needs and will resume ASR pilot testing once the need for groundwater production has lessened.
- **AMI:** The City is working to enhance customer service offerings by implementing Automated Metering Infrastructure (AMI). AMI is a system of meters, communication networks, and software that transfers water usage information and service alerts over a secure, wireless network to a central database. This information will be used to prepare water bills, analyze water usage trends, provide customers with hourly water usage information, and notify customers of potential leaks. Installation of radio transmitting devices on existing meters and data collection points at several locations throughout the City's water service area is expected to be complete in late 2023.

WATER SUPPLY ISSUES

There are a number of significant issues related to the City’s water supplies, which are discussed briefly below.

Cachuma Project State Water Rights Order: The U.S. Bureau of Reclamation (Reclamation) operates the Cachuma Project pursuant to a water rights permit issued by the State Water Resources Control Board (SWRCB). The project provides water to the City of Santa Barbara, Carpinteria Valley Water District, Goleta Water District, Montecito Water District, and Santa Ynez River Water Conservation District, Improvement District No. 1 (often referred to collectively as the Cachuma Member Units). The first water right permit for the Cachuma Project was issued in 1958. On September 17, 2019, the SWRCB adopted an order for a new water rights permit for the Cachuma Project. The current permit is the culmination of nearly 20 years of legal proceedings to protect water rights holders and address long-term declines in native Southern California steelhead populations in the Lower Santa Ynez River (downstream of Lake Cachuma’s Bradbury Dam). The new order will result in higher downstream flows during wet years, which will reduce available storage in

Lake Cachuma going into normal and dry years, and a reduction in supplies available to Cachuma Member Units, including the City. The order also requires multiple operating plans from Reclamation. The Cachuma Conservation Release Board (CCRB), of which the City is a member, is providing technical (e.g., biological, hydrological) assistance to Reclamation in the development of these plans.

Cachuma Project Biological Opinion: In 2000, a Biological Opinion (BO) was issued by the National Marine Fisheries Service (NMFS) for Reclamation's operation and maintenance of Bradbury Dam (the Cachuma Project). NMFS is the federal agency that oversees protection of Southern California steelhead, which was federally listed as endangered in 1997. The BO addresses the effects of the Cachuma Project's operations on steelhead and its designated critical habitat in accordance with Section 7 of the Endangered Species Act of 1973. Reclamation, in cooperation with the Cachuma Project Member Units, submitted a new Biological Assessment (BA) in 2013, which included proposed revisions to the Project operations to improve habitat conditions for steelhead while still maintaining water supplies. In 2016, NMFS issued a draft BO, for which the BA served as a basis document. Reclamation could not accept aspects of NMFS's draft BO and submitted a new proposed operating plan and supporting BA in 2019. After additional exchange between the two federal agencies, Reclamation submitted a revised BA in December 2020 that incorporates the operating requirements of the 2019 Water Rights Order. CCRB is currently assisting Reclamation in responding to NMFS's input and requests for additional information regarding the revised BA. When this revised BA is finalized, NMFS will use it to produce a new Biological Opinion that governs Cachuma Project operations. The desired outcome of this BO process is a non-jeopardy determination for steelhead by NMFS. Similar to the State water rights decision, the new BO is important because it could affect Cachuma Project operations and the amount of water supply available to the City and other Cachuma members.

Cachuma Contract 2020: Since the construction of the Cachuma Project, the Santa Barbara County Water Agency (SBCWA) has been the nominal contractor with Reclamation. The SBCWA was formed in 1945 by the State Legislature to facilitate development of the Cachuma Project and to provide a water supply to the City of Santa Barbara, Carpinteria Valley Water District, Goleta Water District, Montecito Water District, Summerland Water District⁴, and Santa Ynez Water Conservation District Improvement District No. 1. The City and these districts are collectively known as the "Cachuma Member Units." The SBCWA Act (Act), which created the SBCWA and specifies its powers, designates the County Board of Supervisors as the legislative body of the agency. The SBCWA's authority is limited by the Act to supplying water to the Cachuma Member Units.

In 1949, the SBCWA entered into a long-term agreement with Reclamation for the development of the Cachuma Project and supplying water to the Cachuma Member Units (the Original Master Contract). Concurrently with the execution of the Original Master Contract, the SBCWA executed essentially identical water supply agreements with each of the Cachuma Member Units.

In the mid-1990s, the SBCWA, on behalf of the Cachuma Member Units, and the Cachuma Member Units requested renewal of the Original Master Contract. The renewed Master Contract was entered into by the SBCWA "acting as agent of the Cachuma Member Units" in 1996 and was set to expire on September 30, 2020. The Cachuma Member Units are the

⁴ Summerland Water District was subsequently merged into the Montecito Water District.

beneficiaries of the water supplied by the Cachuma Project. They are responsible for paying for all Project costs and paid off the capital component of the Cachuma Project in 2015.

On May 2, 2017, the Santa Barbara County Board of Supervisors authorized its staff to initiate renewal of the Cachuma Contract with Reclamation. Reclamation has stated that they generally conduct the contract renewal process only with the direct contractor, SBCWA. However, given the unique connection that the Master Contract has with the Cachuma Member Units (e.g. Member Units are water recipients and are responsible for the associated payments to Reclamation), Reclamation determined it was appropriate for Cachuma Member Units to participate alongside the SBCWA in the technical and negotiation sessions for the contract renewal process.

After completing negotiations on a three-year extension and necessary environmental review, Reclamation signed an amendment to the contract with the SBCWA for water service from the Cachuma Project on September 28, 2020, extending the contract through September 30, 2023. Concurrently, on September 24, 2020, the Santa Barbara County Public Works Director signed the First Amendment to the City's Cachuma Member Unit Agreement with the SBCWA to provide for continued delivery of water from the Cachuma Project to the City. The City's contract with the County incorporates the same terms and conditions as the Master Contract three-year extension. With the contract extensions set to expire on September 2023, Reclamation has indicated that another short-term contract extension will be created and the effort to develop a long-term Master Contract will be postponed. Reclamation has yet to schedule negotiations of another short-term contract extension.

A significant element of the long-term Master Contract negotiations will be carryover water. Carryover water is annually allocated Cachuma water that has not been used by a Cachuma Member Unit in the year it was allocated. Historically, carryover water has been allowed to be banked in Lake Cachuma until it is either used, or Lake Cachuma's Bradbury Dam spills. During a spill event, banked carryover water spills first, and that spilled carryover water is lost. Carryover water is an important water supply for the Cachuma Member Units, as it allows these water agencies to build up a drought buffer, and also provides them the opportunity to better manage their various other water supplies.

During the 2020 Master Contract extension negotiations, Reclamation expressed a strong desire to limit, or cap, the amount of carryover water Cachuma Member Units can bank in Lake Cachuma. Such a substantial change would cause the Cachuma Member Units to reconsider how they manage their water supplies and would impact their ability to prepare for a drought. SBCWA staff has verbally stated that SBCWA supports the Cachuma Member Units desire to not limit carry over water. However, carryover water is likely to remain a point of concern for Reclamation and be a major component of long-term Master Contract negotiation.

Another significant element of the Master Contract negotiations will be the safe yield of Lake Cachuma. In June 2020 the SBCWA shared a draft study prepared by Stetson Engineers, *Safe and Operational Yields of the Cachuma Project*, with the Cachuma Member Units. Prior to completion of the draft study, SBCWA did not consult or confer with the Cachuma Member Units, and, upon review of the draft study, the Cachuma Member Units found it to be flawed in its approach, methodology and conclusions. The Cachuma Member Units sent a letter to the SBCWA stating their objections to the draft study in August 2020 and contracted with Woodard and Curran to develop their own safe yield study for Lake Cachuma. Results of

the Cachuma Member Units' study are being finalized. The goal of this study is to analyze operating scenarios for effective management of the Cachuma Project under the current operational yield of the Project, 25,714 AFY, while meeting other beneficial uses of the Project, including downstream water rights obligations and environmental release requirements. Conclusions from this study are likely to be another important point of discussion in the long-term Master Contract negotiations.

Gibraltar Pass Through Operations: The 2007 Zaca Fire burned approximately 60% of the Gibraltar Reservoir watershed, which normally contributes up to 40% of the City's water supply. On top of historical siltation, the additional sediment load resulting from the Zaca Fire reduced the reservoir's storage capacity by 1,535 AF. The Rey Fire in Fall 2016 also burned within the Gibraltar watershed, which resulted in an additional loss of 303 AF. The full extent of reservoir capacity loss from the 2017 Thomas Fire is still unknown, as sediment will continue to make its way through the watershed and into the reservoir for several years. A bathymetric survey conducted in August of 2021 demonstrated an overall reduction of 275 AF since August of 2017, leaving the reservoir with a current maximum storage capacity of 4,692 AF.

In 1989, the City entered into the Upper Santa Ynez River Operations Agreement (the "Pass Through Agreement") with other Santa Ynez River water agencies. The City agreed to defer its planned enlargement of Gibraltar Reservoir in exchange for provisions that would allow the City to "pass through" a portion of its Gibraltar water to Lake Cachuma for storage and delivery through Cachuma Project facilities. As a result of the Zaca Fire impacts to Gibraltar Reservoir, the City elected to commence the "pass through" phase of operations and is working with the Reclamation to negotiate a Warren Act Contract as the preferred approach for accounting for the City's Pass Through water. To execute a Warren Act Contract, Reclamation must prepare an environmental assessment under the National Environmental Policy Act (NEPA). Reclamation released a draft environmental assessment (EA) that has gone through public review. The final EA has yet to be released by Reclamation. Staff worked with Reclamation in 2019 to review and negotiate draft Warren Act Contract language. Staff continues to wait for a response from Reclamation regarding outstanding EA issues. The Pass Through operations will allow the City to maximize its Gibraltar water rights, while the reservoir continues to lose capacity from sediment settling in the reservoir.

State Water Project/Delta Issues: Significant issues include:

- **Delta Conveyance:** The Sacramento-San Joaquin Delta is a critical conveyance link for all water moved to the south by the State Water Project (SWP). However, the reliability of State Water supply is at risk due to drought, environmental restrictions, and seismic events. The Bay Delta Conservation Plan (BDCP) proposed a solution to balance coequal goals of water supply and environmental benefits. A Draft Environmental Impact Report (EIR) and Draft Environmental Impact Statement (EIS) for the BDCP were made available for public review from December 2013 to July 2014.

In April 2015, State and Federal agencies announced a new alternative which would replace the BDCP as the State's proposed project. The new alternative reflected proposals by Governor Jerry Brown and the California Department of Water Resources to separate the conveyance facility and habitat restoration measures into two separate efforts: California WaterFix and California EcoRestore. These two

efforts are a direct reflection of public comments on the BDCP EIR/EIS and fulfill the requirement of the 2009 Delta Reform Act to meet co-equal goals.

On July 21, 2017, the DWR certified the Final EIR/EIS for the project, approved the California WaterFix (Alternative 4a), and filed a Notice of Determination with the Governor's office. The California WaterFix included two large, four-story tall tunnels to carry fresh water from the Sacramento River under the Sacramento-San Joaquin Delta toward the intake stations for the SWP. The certification was a major milestone that came after more than a decade of analysis, review, and public comment.

In May 2019 the DWR began taking formal steps to withdraw proposed permits for the WaterFix project and begin a renewed environmental review and planning process for a smaller, single tunnel conveyance project, known as the Delta Conveyance Project. This action followed Governor Gavin Newsom's executive order directing state agencies to develop a comprehensive statewide strategy to build a climate-resilient water system. Governor Newsom envisions a smaller, single tunnel through the Sacramento-San Joaquin Delta that would protect water supplies from sea-level rise and saltwater intrusion into the Delta, as well as earthquake risk. It will be designed to protect water supply reliability while limiting impacts on local Delta communities and fish. The Draft Environmental Impact Report was released in July 2022. Project approval will be considered after the conclusion of the environmental review process, which is not expected to conclude until 2024.

The Central Coast Water Authority (CCWA) is one of the 29 SWP contractors. CCWA represents the Member Agencies on SWP matters. CCWA Member Agencies are the City, Santa Ynez River Water Conservation District Improvement District No. 1, City of Buellton, City of Santa Maria, Montecito Water District, Goleta Water District, City of Guadalupe, and Carpinteria Valley Water District. Considering the scope of the proposed new Delta Conveyance project is currently undefined, as is the overall project budget, CCWA and its members have chosen not to participate in the new Delta Conveyance facility at this time. This does not preclude individual agencies from possibly purchasing SWP water from a participating SWP agency in the future.

However, there are concerns that by not participating in the new Delta conveyance project, CCWA members will have less secure water banking opportunities in the state's San Luis Reservoir. This is a result of the new Delta Conveyance project, which is anticipated to cause the San Luis Reservoir to spill more frequently (every other year versus historically where it spilled every ten years), resulting in a loss of available storage to CCWA. For this reason, CCWA undertook a Water Management Strategies Study to identify and evaluate cost-effective strategies to optimize the yield from the SWP. The report included recommendations for water management alternatives that CCWA is now investigating further, including groundwater banking and water exchanges and transfers that involve SWP water and other supplies. One interesting recommendation involves exploring a program to transfer excess Table A water between San Luis Obispo Flood Control and Water Conservation District (SLOFCWCD) and CCWA, since SLOFCWCD often has excess Table A water, but is limited in conveyance capacity, and CCWA has available conveyance capacity, but is often short in available Table A water in dry years. (Table A water is the amount of SWP water an agency has available, via

contract, annually, subject to allocation percentages determined by DWR. The City's Table A amount is 3,300 AFY).

- **State Water Contract Assignment:** The City of Santa Barbara receives imported water from the SWP through the CCWA. The CCWA is a JPA formed in 1991 to finance, construct, manage and operate regional treatment and conveyance facilities that deliver State Water to its member agencies, including the City of Santa Barbara. While the CCWA is responsible for financial and operational management of regional SWP facilities, the CCWA does not hold the current State Water Contract with DWR. The State Water Contract with DWR was first executed in 1963 and is currently held by the SBCWA. On October 31, 2017, the Santa Barbara City Council authorized amending existing agreements with CCWA to effectuate the assignment of the State Water Contract from the County to CCWA. All of the CCWA member agencies have also provided such authorization. CCWA has also received written confirmation of DWR's willingness to accept assignment of the contract to CCWA. CCWA has been trying to work with Santa Barbara County for the remaining approval to assign the contract to CCWA; however, the County Board of Supervisors has not taken any action to work toward contract reassignment.
- **Legal Action Against the County of Santa Barbara:** In early 2021, the Department of Water Resources and many of the 29 individual State Water Project Contractors (including the Central Coast Water Authority through the Santa Barbara County Flood Control and Water Conservation District) executed an amendment to the State Water Project Contract, commonly referred to as the "Water Management Amendments." These new contract amendments were designed to improve the flexibility and efficiency of buying and selling water across the SWP, allowing Member Agencies to better manage supplies during drought and climate challenges. They also provide significant financial benefits to CCWA and its Member Agencies by creating opportunities to either offset the expense of State Water for the benefit of their customers or help offset the cost of developing local supplies.

While the County did execute the Water Management Amendments, they imposed significant and unreasonable conditions on sales and exchanges of state water, depriving the CCWA Member Agencies of the benefits of the new contract amendments. In June 2021, CCWA and each of its Member Agencies, including the City, filed a lawsuit against the County of Santa Barbara regarding management of the SWP. The lawsuit is ongoing.

Groundwater Management Plan: The City's groundwater basins are relatively small, but groundwater plays an important role in meeting demand during drought and emergency periods. Located on the southern side of the Santa Ynez Mountains, groundwater and desalination are the City's only existing potable water supplies that are truly local. This is important in case of a potential catastrophic interruption of one or both tunnels (Tecolote Tunnel and Mission Tunnel) that convey water supplies to the City through the Santa Ynez Mountains, such as in a seismic event.

The City relies on two groundwater basins for water supply: the Foothill Basin and the Santa Barbara Basin, which is comprised of Storage Units I and III. The City maintains nine groundwater wells – five in Storage Unit I, three in Foothill, and one in Storage Unit III, which is used to augment non-potable water supplies in the recycled water system. For decades, the City has been working with the United States Geological Survey (USGS) to monitor water

levels and water quality of the groundwater basins and develop a detailed model to estimate the sustainable groundwater yield for use in the City's water supply planning. The City has also adopted local ordinances regarding groundwater wells to protect the groundwater resource.

In 2014, the State of California adopted the Sustainable Groundwater Management Act (SGMA). In addition, the State developed rankings of recognized groundwater basins based on their condition. For State-ranked "high" or "medium" priority basins, SGMA requires the formation of a local groundwater sustainability agency (GSA) and adoption of locally-based management plans. SGMA provides local GSAs with tools and authority to 1) require registration of groundwater wells, 2) measure and manage extractions, 3) require reports and assess fees, and 4) request revisions of basin boundaries.

The City's groundwater basins are currently ranked by the State as "very low" priority. As a result, there is no current requirement to form a GSA or develop a groundwater management plan in order to be in compliance with SGMA. However, the EUWMP made several recommendations regarding groundwater management in the City:

1. The City should work with the USGS to update the City's sustainable yield estimate and drought storage estimate for the Foothill Basin and Storage Unit I.
2. The City should prepare an annual report on the current basin conditions to inform annual water supply planning efforts. The City could consider creating a Groundwater Sustainability Plan (GSP) in accordance with SGMA, or an equivalent GSP that meets the City's needs, but is outside of SGMA compliance and reporting requirements.

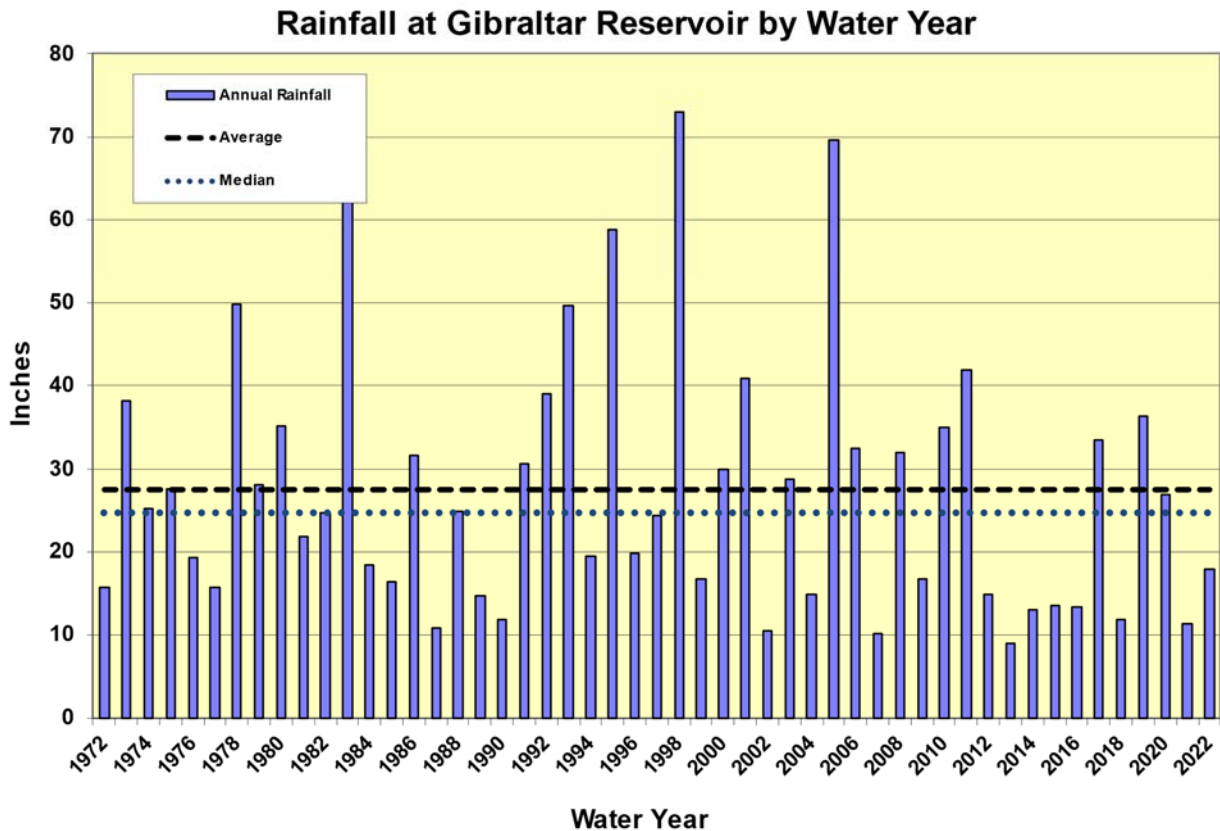
The City entered into a contract with USGS in 2022 to better define sustainable yield and drought storage for the City. This project is ongoing.

Lincolnwood Water System Project – Through an agreement originally signed in 1979, the City acquired the water system infrastructure of the Lincolnwood Mutual Water Company, which served a community of about 60 homes in the San Roque area by pumping groundwater from the Foothill Groundwater Basin. The neighborhood residents are now City water customers and are receiving City water supplies. As part of the system acquisition, the City received one nonoperational and one operational groundwater well. The City is not currently pumping from the operational well. A condition assessment will be conducted to determine if the well will be operated as a water supply source for the City in the future, or if it will be decommissioned.

Recycled Water Market Assessment – The City entered into a contract with Carollo Engineers in January 2022 to complete a market assessment of potential recycled water customers and cost-effective system extensions. The goal of the study was to identify additional potable water uses that could be offset by non-potable recycled water use to maximize the City's current non-potable recycled water production. Although most recycled water main extensions were deemed not cost-effective, the study identified a system extension to a commercial laundry as a potential viable expansion. Potential regulatory, permitting, and additional safety protocols associated with recycled water use in a commercial laundry setting may limit the customer's interest in using recycled water for their business needs. Additional outreach with the customer is necessary. In addition, the study identified the potential for increased recycled water use by two existing recycled water customers – the Santa Barbara Zoo and Santa Barbara City College – should either entity embark on future construction projects at their site.

Appendix A – Supplemental Water Supply Information

Long-Term Rainfall Data



Groundwater Balance

Project conditions of the State Water Project (SWP) require the City to use SWP water to offset any demonstrated groundwater basin overdraft. Under the EUWMP, the City uses groundwater conjunctively with surface supplies, such that significant groundwater use only occurs when surface supplies are reduced. In response to the unprecedented drought, groundwater pumping increased in Water Years 2015 through 2018, providing a critical water supply. In WY 2019, the City pumped two groundwater wells to help meet peak summer demand from May through August, producing 318 AF. In WY 2020 the City only pumped 22 AF of groundwater, and in WY 2021 the wells were exercised to maintain function, but no groundwater was produced. The wells were turned off to allow them time to recover after experiencing heavy pumping during the height of recent drought. In WY 2022, in response to continued dry conditions, City wells were turned on July through September, producing 203 AF.

The estimated groundwater yield available to the City over a 5-year drought period, assuming no seawater intrusion, was originally based on numerical groundwater modeling performed by the United States Geological Survey (USGS) in 1998. In 2018, USGS updated their modeling efforts of the Santa Barbara (Storage Unit I) and Foothill Basins using a 10-year drought period and assuming some level of acceptable seawater intrusion. Groundwater yield estimates in this report have been updated based on that recent effort.

As summarized in Table A-1, the estimated 10-year yield for City use is 16,090 AF in Storage Unit I and 8,130 AF in the Foothill Basin.

The City’s groundwater pumping over the last 10 years is shown in Table A-1. In addition, any significant City pumping from storage that occurred prior to the drought is also shown. In normal conditions, the City limits pumping of Storage Unit I and the Foothill Basin to be equal or less than the City’s share of the perennial yield of the basins (assumed to be 800 AFY and 450 AFY, respectively). However, in 2005-2011, some additional pumping from Foothill Basin storage reserves was necessary to meet drinking water quality regulations prior to completion of the Cater Ozone project. To estimate the remaining groundwater storage available, the City’s actual pumping over the last ten years was accounted for, as well as previous City pumping from storage (or pumping that exceeded its estimated share of the perennial yield). Based on the remaining yield, the City’s primary groundwater basins are in long-term balance with no overdraft projected in the next year. However, should drought conditions continue, it is anticipated the basin storage will remain at low levels. The City has factored this into its water supply planning such that the City does not plan to use groundwater beyond the estimated remaining storage yield to prevent overdraft conditions. The City plans on using 1,965 AF of groundwater supplies in 2023 in response to continued dry conditions.

Table A-1 Groundwater Balance

Storage Unit 1 Basin	
Estimated 10-Year Drought Storage Yield for City Use ¹ :	16,090 AF
City Groundwater Production last 10 years (October 2011 – September 2022):	6,035 AF
Previous City Use of Groundwater Storage (October 2005 – September 2011) ² :	0 AF
Remaining Drought Storage Yield for City Use:	10,055AF
Projected City Groundwater Production for 2023:	1,335 AF
Foothill Basin	
Estimated 10-Year Drought Storage Yield for City Use ¹ :	8,130 AF
City Groundwater Production last 10 years (October 2011 – September 2022):	3,574 AF
Previous City Use of Groundwater Storage (October 2005-September 2011) ² :	740 AF
Remaining Drought Storage Yield for City Use:	3,816 AF
Projected City Groundwater Production for 2023:	630 AF
¹ Nishikawa, Tracy, ed., 2018, Santa Barbara and Foothill groundwater basins geohydrology and optimal water resources management - developed using density dependent solute transport and optimization models: U.S. Geological Survey Scientific Investigations Report 2018-5059, 4 chap. (A-D), variously paged, https://doi.org/10.3133/sir20185059 ² This represents City pumping exceeding the assumed perennial yield available to the City, thereby drawing from stored groundwater reserves. The assumed perennial yield available to the City is 450 AFY from Foothill and 800 AFY from Storage Unit I (source: City of Santa Barbara 2015 Urban Water Management Plan). Note that in WYs 2008-2010, the City increased pumping from Foothill Basin to meet water quality regulations as required prior to completion of the Cater Ozone project.	

The City uses non-potable groundwater from Valle Verde Well located in Storage Unit III to augment supply to the recycled water system as needed. The historical maximum annual pumping by the City from Storage Unit III is 216 AF, which occurred in 1990. The estimated average annual Storage Unit III yield available for use by the City is approximately 200 AFY. The City did not extract any water from Storage Unit III in WY 2022. Although the City does not plan on using any water from Valle Verde Well in WY 2023, the City may use the well as needed during short periods should the recycled water plant go offline for repair or maintenance.

Projection of Supply Availability

Table A-2 summarizes the City's water supply sources and fulfills a requirement of the project conditions for the SWP. The Water Year 2022-2023 Supply Plan reflects a projected total demand of 12,485 AF including ~180 AF for El Estero process water.

Table A-2 Sources of Supply (AF)

Source of Supply	WY 2022 Original Supply Plan	WY 2022 Actual	WY 2023 Supply Plan (Projected)
Gibraltar Reservoir	0	1,629	0
Cachuma Project	8,675	4,495	4,821
Mission Tunnel	528	718	528
Devil's Canyon	0	26	0
Juncal Res. (300 AF from MWD)	(w/ Cachuma)	(w/ Cachuma)	(w/ Cachuma)
State Water/Water Purchases	0	384	0
Groundwater (potable) ^A	340	203	1,965
Desalination	1,911	2,874	2,323
Recycled Water ^C	1,031	1,257	1,056
Groundwater (non-potable) ^A	0	0	0
Net Other Supplies ^B	(na)	-145	(na)
Total Production:	12,485	11,441	10,693
Total Demand^D:	12,485	11,451 ^E	10,693

^A The City uses potable groundwater supply from Storage Unit I and Foothill, and non-potable groundwater supply from Storage Unit III.

^B Represents miscellaneous production sources (positive values) and water used from the distribution system for purposes such as transfers to adjacent water purveyors or groundwater recharge (negative values).

^C Planned and actual recycled water demands include ~180 AFY for El Estero process water. Blend water is subtracted from recycled system production.

^D Actual 2022 demand includes 10,173 AFY potable demand, 981 AFY recycled demand, and 297 AFY El Estero process demand.

^E Total demands do not include the 1,430 AFY sold to Montecito Water District as part of the Water Sales Agreement. The demands in this table represent City demands only. WY 2023 projected demands include 15% mandatory conservation beginning in March 2023.