



City of Santa Barbara
Public Works Department

Memorandum

DATE: November 18, 2021

TO: Water Commission

VIA: Joshua Haggmark, Water Resources Manager

FROM: Dakota Corey, Water Supply Analyst

SUBJECT: Water Supply Update

Executive Summary

This water supply update provides an overview of the City's water supplies at the beginning of Water Year 2022, and includes an analysis and conclusion that the City's available water supplies are sufficient to meet demands over the next two years. However, if this winter features below-average rainfall as currently projected, additional water conservation and groundwater pumping will be needed to stretch water supplies into a third or fourth water year. Staff will continue to monitor water supplies throughout the winter months to determine if further action is needed in the spring of 2022.

Water Supply Update

Water Year 2022 began on October 1, 2021. Santa Barbara typically receives most of its rainfall from January through March. At the start of each new water year, staff updates the City's water supply planning charts to reflect actual water used during the previous water year (in this case, October 1, 2020 – through September 30, 2021) and extends the supply strategy one additional year for drought planning purposes. Thus, the current supply strategy extends through Water Year 2024.

In total, the City used 11,900 acre-feet (AF) of water, including nearly 900 AF of recycled water, in Water Year 2021. The primary water supply sources were Lake Cachuma, Gibraltar Reservoir, Mission Tunnel, Desalination, and Recycled Water. A brief update on the status of each of the City's water supplies is described below:

- **Lake Cachuma:** The Cachuma Member Units were granted a 70 percent Cachuma allocation for Water Year 2022, a 70 percent allocation is 5,794 AF of water for the City. In addition to the allocation, the City currently has over 20,000 AF stored in Lake Cachuma as carryover water. This represents two years' of the City's current annual demand. Water from Lake Cachuma supplied 58 percent of the City's demand in Water Year 2021. It is projected to supply 70 percent of Water Year 2022 demands.
- **Gibraltar Reservoir:** Water from Gibraltar was an important supply for the City in the beginning of Water Year 2021, supplying approximately 10 percent of the City's total Water Year 2021 demand. Currently, Gibraltar is nearly empty at 4 percent capacity.

Average rainfall can fill Gibraltar, and the reservoir is ready to capture and store any precipitation that falls this winter.

- **Mission Tunnel:** The City received 653 AF, or 5 percent of the annual demand, of water from Mission Tunnel infiltration in Water Year 2021. Similar flows are expected for Water Year 2022.
- **Groundwater:** The City continues to rest its groundwater basins to let them recover after heavy pumping between 2015 and 2017 in response to drought conditions. If needed, it is estimated the City still has over 10,000 AF of drought storage in the Storage Unit #1 groundwater basin and 3,800 AF of drought storage in the Foothill Groundwater Basin. Current groundwater pumping capacity is 3,500 AFY.
- **Desalination:** The Charles E. Meyer Desalination Facility serves as a drought preparedness, response, and recovery supply for the City. It supplied 18 percent of the City's total demand in Water Year 2021, and is projected to supply a similar proportion of supply for Water Year 2022.
- **State Water Project (SWP):** The state is experiencing widespread drought conditions, and reservoirs on the State Water Project are currently at record-low storage. The City's SWP allocation for 2021 was 15 percent, or 165 AF. A zero percent allocation is expected for 2022 due to statewide drought conditions.
- **Recycled Water:** The City's recycled water system continues to produce tertiary-treated recycled water for large landscape use. Use of recycled water offsets the need for potable drinking water to irrigate landscapes. Recycled water made up 8 percent of the City's Water Year 2021 demand and is expected to supply the same in Water Year 2022.

Updates to the City's water supply planning strategy are conservative. The updates assume hydrological conditions similar to actual conditions during the most recent drought. Under this scenario, there is little to no rainfall for three years, resulting in no inflows into both Lake Cachuma and Gibraltar Reservoir. Lake Cachuma is 48 percent full, and the City receives 70 percent of its Cachuma allotment in Water Year 2022, a zero percent allocation in Water Year 2023, and a zero percent allocation in Water Year 2024. It also assumes that there are drought conditions statewide, which reduce the State Water Project (SWP) water allocation to zero percent in Water Year 2022 and 15 percent in Water Years 2023 and 2024. The analysis also assumes that the desalination plant is operated continuously through Water Year 2024 at a 70 percent (of 3,125 AF) production rate. This conservative planning approach allows staff to evaluate if the City has sufficient water to meet demands under three additional years of drought.

The recent update to the City's water supply planning strategy demonstrates that, even under drought conditions, the City's water demands can be met for the next two years (through Water Year 2023) using a combination of carryover water from Lake Cachuma, Gibraltar Reservoir, Mission Tunnel infiltration, desalination, groundwater pumping, and recycled water. However, conservatively assuming the next three years are drought years, it would be prudent for the City to enact a Stage 2 Water Shortage Condition and associated water use regulations in the spring of 2022, as described in the City's 2021 Water Shortage Contingency Plan, in order to stretch Cachuma supplies in preparation for continued drought conditions. If the current rainy

season turns out to be dry, the analysis concludes mandatory conservation of 15 percent beginning in the spring of 2022 and mandatory conservation of 20 percent beginning in the spring of 2023 (after a second dry winter) would allow the City to stretch its supplies through Water Year 2024 and into Water Year 2025.

The supply planning update incorporates water demands from the City's newly adopted Enhanced Urban Water Management Plan (EUWMP), which defined a "new normal" baseline water demand, including permanent reductions in water use made by the City's water customers in response to the last drought and 1,430 AF of supply to Montecito Water District, per the water sales agreement, beginning in January 2022. Thus, while the community continues to conserve at a rate of 21 percent compared to the former 2013 baseline water demands, the new EUWMP demand projection redefines the baseline to approximately that of 2020 water demands. Conveniently, the state has also redefined the baseline for water conservation from 2013 to 2020 moving forward, which will help with any mandatory reporting required by the state. However, this means that any future mandatory conservation will be on top of our community's already very efficient water use; thus, achieving conservation rates of 15 or 20 percent in the next few water years will be a significant undertaking by our community as a whole.

On October 19, 2021 Governor Gavin Newsom issued a proclamation extending the drought emergency across all of California, as a result of dry conditions and record low storage in the state's largest reservoirs. While drought conditions across the state are significant, prudent planning and continued community-wide efficient water use have positioned Santa Barbara well for withstanding several more dry winters. Currently, as a result of new policies allowing the City to use desalination as a drought preparedness, response, and recovery supply, the City has over two years' worth of annual water demands stored in Lake Cachuma alone. The desalination plant continues to produce water each month, allowing the City to stretch its supplies stored in Lake Cachuma. In addition, while groundwater basins remain low as a result of heavy pumping in 2015 through 2017, the City still has drought supplies available in its groundwater basins, which it could begin pumping in the spring of 2022 if the winter is dry. While it typically takes above-average rainfall to significantly increase storage in Lake Cachuma, even average rainfall could fill Gibraltar Reservoir, which would allow the City to further stretch its supplies. A full Gibraltar Reservoir can supply approximately 40 percent of the City's annual water demands. While we must always use a conservative approach in our water supply planning in order to prepare for extended drought conditions, a lot depends on how much rainfall we receive this winter. For this reason, staff recommends monitoring rainfall over the next several winter months. In the spring of 2022, staff will update the water supply plan based on winter rainfall and will make recommendations to Water Commission and City Council regarding the enactment of a Stage 2 Water Supply Condition and associated mandatory conservation, should it be warranted.