CITY OF SANTA BARBARA

COUNCIL AGENDA REPORT

AGENDA DATE: January 26, 2021

TO: Mayor and Councilmembers

FROM: Water Resources Division, Public Works Department

SUBJECT: Water Supply Update and Annual Water Supply Management Report

RECOMMENDATION: That Council:

A. Receive an update on the Stage 1 Water Supply Condition and 3-year Water Supply Outlook; and

B. Approve and adopt the City of Santa Barbara's Annual Water Supply Management Report for Water Year 2020, finding that the groundwater resources are in long-term balance in accordance with the conjunctive management element of the City's Long-Term Water Supply Plan.

EXECUTIVE SUMMARY:

This water supply update provides an overview of the City's water supplies at the beginning of Water Year 2021, and includes an analysis and conclusion that the City's available water supplies are sufficient to meet demands over the next three years. This report also provides a summary of the 2020 Annual Water Supply Management Report (WSMR), which is a backward-looking document that summarizes water supplies and issues for Water Year 2020, which extended from October 1, 2019 to September 30, 2020. The report fulfills a mitigation requirement for the Coastal Branch of the State Water Project to manage water supplies in a manner that prevents long-term overdraft of local groundwater supplies.

DISCUSSION:

Water Supply Update

Water Year 2021 began on October 1, 2020. 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, 2019 – through September 30, 2020) and extends the supply strategy one additional year for drought planning purposes. Thus, this supply strategy extends through Water Year 2023.

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, in which there was little to no rainfall for three years, resulting in no inflows into both Lake Cachuma and Gibraltar Reservoir. Under this assumed scenario, Lake Cachuma is 74 percent full, and the City receives 100 percent of its Cachuma allotment in Water Year 2021, a 50 percent allocation in Water Year 2022, and a 50 percent allocation in Water Year 2023. It is also assumes that there are drought conditions statewide, which reduce the State Water Project (SWP) water allocation to 35 percent in Water Years 2020 through 2022. 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 through Water Year 2023 using a combination of water from Lake Cachuma, Gibraltar Reservoir, Mission Tunnel infiltration, desalination, and recycled water. If the next three years are drought years, the Water Resources Manager may decide to begin using the City's drought supplies, including groundwater and State Water Project (SWP) water in Water Year 2023 to preserve Cachuma supplies in preparation for continued drought conditions. However, the City does have enough carryover water in Lake Cachuma to supply customer demands through Water Year 2023 without the use of SWP water or groundwater. There will be no need to expand the capacity of the Charles E. Meyer Desalination Plant (Desalination Plant) over this period. Overall, the City is well situated to meet water demands for the next three years even under drought conditions, as recent management decisions have resulted in a significant amount of City-allocated water stored in Lake Cachuma.

The supply planning update conservatively assumes that the community will continue to conserve at a rate of 25 percent of pre-drought (2013) demands of 13,765 acre-feet/year (AFY). The current 12-month running average water conservation reduction is 27 percent, as compared to 2013 water demands. Water Supply and Community Development staff recently developed a new baseline demand projection and a "demand envelope," or a range of potential future water demands out to 2050, based on the latest population, housing, and economic data available. The demand assumptions in this supply planning update are congruent with the new baseline demand projections. Water Supply staff will be tracking demands against this envelope. Water demands are notoriously difficult to project because they are largely dependent upon human behavior and permanent water conservation measures made by customers during droughts, such as installing drought-tolerant landscaping and efficient water fixtures.

The most recent supply planning update considers if the City has sufficient surplus water supplies to meet the conditions of the recently executed Water Supply Agreement with the Montecito Water District (MWD). Beginning in January 2022, the City will be responsible for supplying MWD with 1,430 acre-feet (AF) of water annually. In addition, the new supply planning update includes the potential sale of up to 100 AFY of recycled water to La Cumbre Mutual Water Company (LCMWC) beginning in the spring of 2022.

Planning results demonstrate that the City has sufficient surplus water supplies to meet both City demands as well as the additional potable demand for MWD and the additional recycled water demand for LCMWC over the next three years.

While the supply planning update demonstrates the City has sufficient water supplies to meet both City, MWD, and LCMWC demands, even with persistent drought conditions over the next three years; staff recommends that the City remain in the Stage One Water Supply Condition. The City relied heavily on its groundwater and supplemental water purchases for several years during the recent drought. Currently, the Foothill Groundwater Basin is at historic low levels, and the Santa Barbara Groundwater Basin (Storage Unit 1) shows signs of seawater intrusion because of prolonged pumping. Both basins are showing signs of recovery, but it is estimated they will still need approximately five years to return to pre-drought conditions. The City was successful in acquiring supplemental water via the SWP system to meet demands during the drought. However, the supplemental water purchases required a portion of that water to be returned. The City still has an outstanding water debt of 2,000 AF of water. The strategy in the coming years is to rest the groundwater basins to allow them to recover naturally and to continue paying down water debt by using a portion of the City's state water allocations. The City will use its other water supplies to meet demands, including desalinated water and continued water conservation measures. Staff will reassess the water supply strategy in the spring of 2021 following the rainy season to determine if continuation of the Stage One Water Supply Condition is warranted.

Annual Water Supply Management Report

The Annual Water Supply Management Report (WSMR) summarizes activities of the past water year (October 2019 – September 2020). The WSMR fulfills a mitigation requirement of the Coastal Branch of the State Water Project for managing water supplies to prevent long-term overdraft of local groundwater. City staff also uses the WSMR to inform Council and the public of recent activities and current water supply conditions. Summarized below are key issues in the WSMR for each City water supply.

Long-Term Water Supply Plan/Enhanced Urban Water Conservation Master Plan

The 2011 Long-Term Water Supply Plan (LTWSP) has been the primary technical and policy document used to guide the City's water supply management over the next 20 years. The LTWSP also serves as the basis for the City's state-mandated Urban Water Management Plan (UWMP), which is required to be updated every five years. The most recent UWMP Update was adopted by Council in June 2016, and submitted to the state in July 2016.

The City recently experienced the most severe and long-lasting drought on record, exceeding the "design drought" used in the 2011 LTWSP analysis. Additionally, several risks and uncertainties have the potential to affect the availability of the City's current water supplies (discussed later in this report). As a result, the City is reassessing the adequacy, reliability, and cost of its water supplies with respect to these issues, and will integrate the LTWSP into the 2020 UWMP Update to create one comprehensive water

supply planning report, referred to as the Enhanced Urban Water Management Plan (EUWMP). The EUWMP project, branded as "Water Vision Santa Barbara", will evaluate future water supply portfolios on financial, environmental, and social criteria, and includes a transparent community engagement process. For more information on the EUWMP, including draft technical memorandums summarizing the analyses performed to date, please visit the project's webpage: SantaBarbaraCA.gov/WaterVision.

Lake Cachuma

Lake Cachuma is one of the most important indicators of the City's water supply status, and ended the water year on September 30, 2020 at 74 percent of its capacity. As a result, the City and other Cachuma Member Units will begin Water Year 2021 with 100 percent allocation of Cachuma water rights, which for the City is 8,277 acre-feet. Key issues for Lake Cachuma are the Cachuma Project State Water Rights Order, Cachuma Project Biological Opinion, and Cachuma Contract 2020. For a complete description of each issue, please refer to the attached Draft WSMR.

Gibraltar Reservoir

Gibraltar Reservoir filled and spilled in March 2020 and, over the course of the year, the City received 4,335 acre-feet of water from Gibraltar. By the end of the water year, Gibraltar was at 37 percent of capacity, with water diversions to the City continuing into the new water year. Siltation related to the 2007 Zaca Fire, the 2016 Rey fire, and the 2017 Thomas Fire has resulted in a significant reduction in storage capacity at Gibraltar Reservoir. A bathymetric survey performed in June 2020 indicates Gibraltar has a maximum storage capacity of 4,559 acre-feet, which is approximately one-third of its original capacity. The continued reduction in storage capacity was the impetus for initiating the "Pass Through" option under the 1989 Upper Santa Ynez River Operations Agreement.

Groundwater

The City's practice is to conjunctively use its groundwater basins such that pumping is increased during droughts when surface water is limited. In response to the recent unprecedented drought, increased groundwater pumping in Water Years 2015 through 2018 provided a critical water supply for the City. Since the rain events that began in the spring 2017, the City has been able to rest its groundwater basins, and has relied more on surface water supplies and desalinated water. At the beginning of Water Year 2020, 22 acre-feet of groundwater was produced during regular maintenance of the wells. Since then, the wells have been taken out of service. It is estimated that it will take at least five years for the City's groundwater storage to recover from the recent drought. Based on the remaining estimated yields of the basins, groundwater resources are in long-term balance, and groundwater production does not exceed estimated basin yield. The City has factored this into its water supply planning and does not plan to use groundwater supplies that exceed the estimated remaining yield. This practice will ensure groundwater resources are kept in long-term balance. The City also continues to monitor groundwater levels and water quality for seawater intrusion.

State Water Project

The City receives imported water from the SWP through the Central Coast Water Authority, a joint-powers authority 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. The 2020 SWP allocation was 20 percent of Table A contract amounts, which is 660 acre-feet for the City. The City did not use any SWP water to supply its customers in Water Year 2020; however, it did exchange 387 acre-feet of SWP water for Cachuma allocation with the Sana Ynez River Water Conservation District, Improvement District No. 1, pursuant to the Exchange Agreement. Key issues for the SWP include the Delta Conveyance Project, State Water Contract Assignment, and State Water Storage Programs. For a complete description of each issue, please refer to the attached draft WSMR.

Desalination

In response to the severity of the recent drought, the City reactivated the Desalination Plant in 2017 with a capacity of 3,125 AFY. The plant is owned by the City, but operated under a contract with IDE Americas, who delivered 2,749 acre-feet of desalinated water to the City's water system in 2020. Per the adopted 2011 LTWSP, the Desalination Plant serves as a drought relief/recovery measure. With local groundwater supplies still recovering, desalinated water was used as an alternative supply to groundwater. With the significant investment made to reactivate the Desalination Plant, the long-term role of this supply is currently being evaluated in the water supply planning effort for the 2020 EUWMP.

Recycled Water

The City's upgraded recycled water filtration plant went online on November 2, 2015, replacing the previous filtration plant constructed in 1989. The goal of this project was to eliminate or significantly reduce the need to use potable water for blending to meet Title 22 water quality requirements. In 2020, the City supplied recycled water customers with 739 acre-feet of water and 31 acre-feet of potable blend water, marking a continued significant reduction in potable water use because of the project.

Water Conservation

In accordance with the 2011 LTWSP, the City's Water Conservation Program is operated to minimize the use of potable water supplies, meet the requirements of the California Water Efficiency Partnership Best Management Practices, and achieve compliance with the State's 20 percent by 2020 per-capita water use reductions. Water conservation measures are evaluated for cost effectiveness based on the avoided cost of additional water supplies. The City recently updated its Water Conservation Strategic Plan, including its adopted conservation measures and programs. In Water Year 2020, City customers continued extraordinary levels of water conservation. This resulted in a 12-month average reduction of 27 percent, as compared to 2013 water demands.

Supply Summary

Total water supply produced in Water Year 2020 was 11,044 acre-feet, with 93 gallons used per person per day. Production and usage was down overall for the year, as the City continued to respond to water supply conditions from the prolonged drought. Water conservation remains strong amongst customers with demand for water in 2020, being comparable to demands in the late 1950s and early 1960s.

SUSTAINABILITY IMPACT:

The City's groundwater resources are in long-term balance in accordance with the conjunctive management element of the City's Long-Term Water Supply Plan. Sufficient and well-managed water supplies are essential for sustaining the City.

ENVIRONMENTAL REVIEW:

Receiving water supply and condition updates, and approving and adopting a water supply management report are exempt from the California Environmental Quality Act (CEQA) review.

WATER COMMISSION RECOMMENDATION

This item was presented to the Water Commission at its meeting on December 17, 2020, and the Commission voted X-X in support of staff's recommendations.

A copy of the report may be requested from the Public Works Department for public review, please contact us at PWInfo@SantaBarbaraCA.gov to request a copy.

ATTACHMENTS: 2020 Draft Water Supply Management Report

PREPARED BY: Catherine Taylor, Water Supply and Services Manager/DC/am

SUBMITTED BY: Brian D'Amour, Acting Public Works Director

APPROVED BY: City Administrator's Office