CITY OF SANTA BARBARA

COUNCIL AGENDA REPORT

AGENDA DATE: August 20, 2024

TO: Mayor and Councilmembers

FROM: Water Resources Division, Public Works Department
Energy and Climate Division, Sustainability and Resilience Department

SUBJECT: Water Resources Energy Master Plan [Agreement]

RECOMMENDATION:

That Council authorize the Public Works Director to execute a City Professional Services contract with Hazen and Sawyer, in the amount of $300,000 for the development of a Water Resources Energy Master Plan.

DISCUSSION:

Background

Conveyance and treatment of the City of Santa Barbara's (City) water and wastewater are energy-intensive processes. To deliver reliable water and wastewater service meeting all regulatory standards, Water Resources owns and operates four treatment facilities, a hydroelectricity generation facility, and numerous pump and lift stations. This responsibility of managing the City's water supply and operating and maintaining the various water and wastewater systems makes the Water Resources Division the City's largest energy user, collectively using 14,864,000 kilowatt hours (KWh) or 14.864 gigawatt-hours of electricity in 2023. This represents approximately 4% of all electricity usage within the City.

Beginning with the City's Santa Barbara Clean Energy Program in 2021, Water Resources facilities have been powered by 100% carbon free electricity, supporting the City's goal to reduce greenhouse gas emissions and achieve carbon neutrality by 2035. Historically, Water Resources staff have aimed to proactively manage energy usage through individual facility audits and incorporating efficient equipment and systems through capital improvement projects; however, to date, there has not been a comprehensive analysis of all Water Resources' facilities and systems with a plan to guide Water Resources staff in optimal energy management or how these systems could optimally interact from an energy perspective. Water Resources has invested in local sustainable energy facilities like Cater Water Treatment Plant's battery installation, Gibraltar's hydroelectric facility and El Estero's cogeneration facility that support the City's energy and greenhouse gas emissions. However, there are numerous other options for energy conservation and generation and

without a comprehensive plan it is not clear how to go about evaluating and prioritizing options with limited resources.

In addition to working towards the City's goals of reducing greenhouse gas emissions, Water Resources is always looking for opportunities to deliver water and wastewater service to the community cost-effectively. Not only have energy costs risen across the State in recent years, particularly in the post-pandemic years, energy costs are now based on time-of-use (when the energy is consumed). Water Resources operations, specifically when water is pumped and treated, may be able to be adjusted to minimize the impacts of time-of-use, but those opportunities need to be evaluated to ensure the impacts to service are minimized.

Project Description

The Water Resources Energy Master Plan (WREMP) will be a joint initiative between Water Resources Division and the Sustainability and Resilience Department. The Project will attempt to capture the Water Resources Division's opportunities for energy conservation and generation for the next 30 years and develop a cross-facility energy master plan with strategies that City staff can deploy over the next ten years to improve the resilience, sustainability, and affordability of its water system operations. The goal is to create a WREMP that can be easily updated every ten years to reflect changes in technological, industry initiatives, regulations, and the energy market.

The Project consists of a four-part scope of services:

Task 1. Baseline Energy Demands and Costs – Analysis of existing energy consumption and generation across all Water Resources facilities at a 15-minute consumption level. Assessment of load flexibility across processes and facilities.

Task 2. Evaluation of Potential Energy Cost-Saving Strategies – Identification of new efficiency/cost-saving opportunities for all facilities (through analyses and meetings with staff) and conduct feasibility and Net Present Value evaluations of those opportunities.

Task 3. Capital Improvement Plan Integration Plan (CIP) – Development of a list of priority projects and recommendations for incorporated into planned capital improvements.

Task 4. Energy Master Plan Documentation – Delivery of a Final Master Plan, Technical Memoranda, and Energy Dashboard to allow Water Resources staff to visualize energy usage to make operational decisions and quantify benefits from capital investments or shifts in operations.

Selection Process

Given the innovative nature of this planned study, the City issued a Request for Qualifications (RFQ) to survey the market. In response to the RFQ, the City received statements of qualifications from two firms. Following a review of their qualifications, the City issued a Request for Proposals (RFP) to both firms, and from the written proposals

and interviews, Hazen and Sawyer was identified as the most qualified and responsive Consulting team to meet the City's needs and deliver the WREMP. The firm has over 70 years of experience consulting for water and wastewater agencies and over 25 years of experience offering energy management services to water agencies. The firm's team includes specialists from its Energy Management and Water Engineering practices who are well-suited to the Division's unique portfolio of water assets.

BUDGET/FINANCIAL INFORMATION:

There are sufficient appropriations in the Water Operating fund in the Fiscal Year 2025 budget to cover the cost of this Project.

SUSTAINABILITY IMPACT:

The WREMP will provide recommendations and strategies to increase efficiency, reduce energy consumption, and optimize energy costs at Water Resources Facilities. Any efforts to improve efficiency and reduce electrical consumption, particularly during peak demands, offer numerous direct and ancillary benefits. The Charles Meyer Desalination Plant and the El Estero Water Treatment facility represent the single most significant electrical load in the entire city and have the greatest opportunity to achieve energy savings as a result of the WREMP. The WREMP will not only offer the Division opportunities to reduce energy use in aggregate, but the study will also offer recommendations to shift energy use away from high-demand periods (for example, summer days between 4-9 pm), where the local and State grids may be stressed to meet statewide energy demands, and electricity is most expensive. By shifting this use, the Water Resources Division can offer local and statewide electrical grid benefits and minimize blackouts and the need for greenhouse gas-emitting thermal peaker plants in other regions to meet Statewide energy needs.

A copy of the contract may be requested from the Public Works Department for public review by contacting PWInfo@SantaBarbaraCA.gov.

ATTACHMENT(S): *None*

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APPROVED BY: City Administrator's Office