



City Council Memorandum

City of Arts & Innovation

TO: HONORABLE MAYOR AND CITY COUNCIL DATE: NOVEMBER 3, 2020

FROM: PUBLIC WORKS DEPARTMENT WARDS: ALL

**SUBJECT: WATER QUALITY CONTROL PLANT - APPROVE THE PROCUREMENT AND
INSTALLATION AGREEMENT FOR AN ADDITIONAL SIX MILLION GALLONS
PER DAY OF LEAPmbr TECHNOLOGY ZEEWEED 500D MEMBRANE
BIOREACTORS FOR WASTEWATER TREATMENT IN THE AMOUNT OF
\$4,700,160, TO ZENON ENVIRONMENTAL CORPORATION, ALSO KNOWN
AS SUEZ WATER TECHNOLOGIES AND SOLUTIONS FROM ONTARIO,
CANADA**

ISSUE:

Approve the Procurement and Installation Agreement for an additional six (6) million gallons per day of LEAPmbr ZEEWEED 500D membrane bioreactors for wastewater treatment with ZENON Environmental Corporation, also known as SUEZ Water Technologies and Solutions from Ontario, Canada, in the amount of \$4,700,160, in accordance with Section 702(k) of the Purchasing Resolution 23256.

RECOMMENDATIONS:

That the City Council:

1. Approve the Agreement to purchase and install an additional six (6) million gallons per day of LEAPmbr technology ZEEWEED 500D membrane bioreactors and associated equipment for wastewater treatment with ZENON Environmental Corporation, also known as SUEZ Water Technologies and Solutions from Ontario, Canada, in accordance with Section 702(k) of the Purchasing Resolution 23256; and
2. Authorize the City Manager, or his designee, to execute the agreement and all related documents with ZENON Environmental Corporation, also known as SUEZ Water Technologies and solutions, including making minor and non-substantive changes.

BACKGROUND:

The City of Riverside Public Works Department, Wastewater Division, is responsible for the collection, conveyance, and treatment of wastewater for over 93,000 customers within the city of Riverside. The City's wastewater system consist of over 800 miles of gravity sewers, 440

miles of City laterals, 20 wastewater lift stations, 16,000 sewer manholes and the Riverside Regional Water Quality Control Plant (RWQCP). Additionally, under agreement with the City, the RWQCP provides treatment for the Edgemont, Jurupa, and Rubidoux Community Services Districts, and the unincorporated community of Highgrove.

The Public Works Department currently treats 28 million gallons per day (MGD) of wastewater at the RWQCP. The RWQCP is split into two different wastewater treatment processes. Plant 1 treats 20 MGD of wastewater by means of membrane bioreactor. The remaining flow of eight MGD is treated through Plant 2 by means of traditional activated sludge treatment.

Membrane bioreactor (MBR) is a wastewater treatment system wherein ultra-fine membranes, which look like thin hollow filaments, are used to filter wastewater. Some MBR systems, including that at the RWQCP, are configured such that a number of cartridges or “cassettes,” each housing thousands of these filaments, are submerged in tanks of partially treated wastewater. Within these tanks, clean water is pulled through the membrane filaments while solids and microorganisms are retained on the outside. Periodic air pulses scour the membranes surfaces, dislodging debris and maintaining their treatment effectiveness.

Plant 1 uses a unique technology, called LEAPmbr from ZENON Environmental Corporation, also known as (aka) Suez Water Technologies and Solutions (SUEZ), which was incorporated into the treatment process as part of the RWQCP Plant Expansion Phase I. Compared to conventional wastewater treatment, LEAPmbr produces a higher quality recycled water, requires less chemical usage and cost, provides an effective treatment for high-strength wastewater, and allows for more treatment in a compact area. It allows the City to meet both current stringent regulatory requirements and anticipated future discharge limitations.

This MBR system has been in operation at the RWQCP since September of 2017.

DISCUSSION:

RWQCP Plant Expansion Phase I Design

During the design of the RWQCP Plant Expansion and Rehabilitation Phase I, an MBR system vendor needed to be selected. Each vendor has different piping layouts, process control, dimensional footprints, warranties, and proprietary technologies built into their equipment. It was then, and remains now, ideal to select and adopt one specific MBR system vendor during the design process. This standardization helps ensure compatibility when making future equipment replacements, or when adding wastewater treatment capacity.

The Public Works Department, with assistance from the Purchasing Services Manager and City Attorney's Office, conducted a pre-selection process to pre-qualify vendors, which could provide an MBR system meeting the RWQCP's site specific needs. A Request for Qualifications was issued and three vendors who met the qualifications responded. After the pre-qualification process, a Request for Proposal was issued on March 25, 2010 to each of the pre-qualified vendors. On April 26, 2010 the City received only two proposals for the project.

Proposals were evaluated in 12 areas including, but not limited to, schedule, membrane integrity, warranty, net present value, and life-cycle cost. ZENON Environmental Corporation, Inc. was selected.

On October 26, 2010, the City Council awarded the procurement of the MBRs to ZENON in the amount of \$17,600,000.

Additional MBR Capacity

On July 21, 2020 the City Council approved the 2019 Integrated Master Plan for Wastewater Collection and Treatment Facilities, and Environmental Review (2019 Wastewater Master Plan). The 2019 Wastewater Master Plan provides a comprehensive review and evaluation of the City's wastewater systems and identifies projects necessary to serve the City's population and meet regulatory requirements through 2037.

Therein, and specifically in Volume 7 of the 2019 Wastewater Master Plan, as Facilities Improvement (FI) – 06, an additional six MGD of MBR treatment is identified as necessary for the rehabilitation of Plant 2. Rehabilitation of Plant 2 was identified in the 2014 Capital Improvement Program and Rate Development Study as presented and approved by the City Council on May 13, 2014. The rehabilitation would include, replacement of aeration basin baffle walls, air diffusers, pumps, motors, instrumentation, underground vault ventilation and lighting systems, flow meters, and replacement of 16 tertiary filter bed drains and media. Plant 2 would have to be completely shut down and this would only be possible once the additional six MGD of MBR were operational, when flows through Plant 2 could be diverted to Plant 1.

MBR Proposal

In April 2020, WQCP staff solicited a Proposal from ZENON (aka) SUEZ Water Technology and Solutions, to add an additional six MGD of MBRs. The Proposal included the manufacture and installation of the LEAPmbr technology membranes, which includes 1,536 membrane modules, 32 ZEEWEED 500D cassettes, scour air blower, integrated control systems, engineering, startup, training, a 120-month warranty, and customer service monitoring. The total cost for the project is \$4,700,160, which includes a \$100 discount off the commercial base cost per membrane module.. This amounts to a savings of \$153,600. Delivery would be approximately 20 weeks following the issuance of a Purchase Order.

Purchasing Resolution 23256, Section 702(k) allows for exception to competitive Procurement, "When the Awarding Entity waives bidding requirements under and according to the circumstances set forth in Section 1109 of the City Charter, or when it is determined by the Manager to be in the best interests of the City to do so".

The Purchasing Manager concurs that this procurement is in compliance with Purchasing Resolution 23256.

FISCAL IMPACT:

The total fiscal impact of the action is \$4,700,160. On June 16, 2020 the City Council approved the funding in the Public Works Sewer Division Capital Improvement Plan program for the 2020/2021 fiscal year to procure and install an additional six MGD of MBRs. Funds are available in the Sewer Fund project Public Works MBR Capacity Increase up to 6MGD (32MGD) Account No. 9912123-440301.

Prepared by: Kris Martinez, Public Works Director
Certified as to
availability of funds: Edward Enriquez, Chief Financial Officer/City Treasurer
Approved by: Rafael Guzman, Assistant City Manager
Approved as to form: Gary G. Geuss, City Attorney

Attachments:

1. Proposal by ZENON (aka) SUEZ.
2. Presentation