

# REGIONAL WATER QUALITY CONTROL PLANT (WQCP) MEMBRANE BIOREACTORS

Public Works Department

City Council  
November 3, 2020

RiversideCA.gov

1

## BACKGROUND

WQCP services **93,000 customers** within the City of Riverside



800 miles of  
gravity sewers



20 wastewater  
lift stations



440 miles of  
sewer laterals



16,000 sewer  
manholes

WQCP provides treatment for Edgemont, Rubidoux Community Services Districts and the unincorporated community of Highgrove



2

RiversideCA.gov

2

## MEMBRANE BIOREACTOR (MBR)

MBR is a wastewater treatment system



Uses ultra-fine membranes which look like hollow filaments



Membrane pore opening is 0.04 microns



1,000's of membranes make up a module



Modules make up a cassette



Cassettes make up a train



There is room for a total of 8 trains



3

RiversideCA.gov

3

## MEMBRANE BIOREACTOR (MBR)

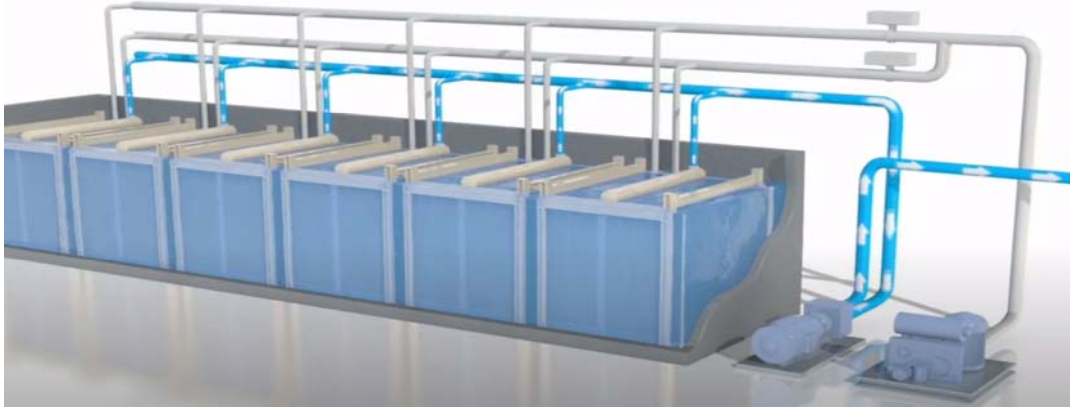


4

RiversideCA.gov

4

## MEMBRANE BIOREACTOR (MBR)



MBR Train



5

RiversideCA.gov

5

## DESIGN OF THE WQCP PLANT EXPANSION AND REHABILITATION PHASE I



**Early 2010** - Pre-qualification of vendors conducted by the Public Works Department



**March 25, 2010** - Request for Proposals were sent to three vendors



**April 26, 2010** - Two Proposals were received



ZENON Environmental Corporation (ZENON) aka Suez Water Technology and Solutions was selected



**October 26, 2010** - City Council awarded procurement of membranes from ZENON



6

RiversideCA.gov

6

## ADDITIONAL MBR CAPACITY



On June 16, 2020 City Council approved funding for the MBR CIP project



On July 21, 2020 City Council approved the 2019 Integrated Master Plan for Wastewater Collection and Treatment (2019 Master Plan)



2019 Master Plan identified the MBR as a Capital Improvement Plan project



7

[RiversideCA.gov](http://RiversideCA.gov)

7

## ADDITIONAL MBR CAPACITY

1. Plant 2 (Conventional Activated Sludge Wastewater Treatment) identified in the 2014 Capital Improvement Program and Rate Development Study ( 2014 Study) to be rehabilitated
2. Council approved the 2014 Study on May 13, 2014
3. Additional 6 MGD of MBRs will allow the shutdown of Plant 2 for the rehabilitation
4. All flow will go to Plant 1 (MBR)



8

[RiversideCA.gov](http://RiversideCA.gov)

8

## MBR PROPOSAL

1. WQCP staff solicited a proposal from ZENON for an addition 6 MGD of MBR's
2. MBR's are the same proprietary technology as the previous MBR's procured by the City from ZENON
3. MBR cassettes are ZEEWEED 500D with LEAPmbr technology

Cost is **\$4,700,160**, which includes a \$100/module commercial based discount

**\$153K SAVINGS**



9

RiversideCA.gov

9

## PROCUREMENT

1. **Purchasing Resolution 23256, Section 702 (k)** allows for an exemption 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 interest of the City to do so".
2. The Purchasing Manager concurs this procurement is in compliance with Purchasing Resolution 23256, Section 702 (k)



10

RiversideCA.gov

10

## FUNDING



No impact to the General Fund



Funding is available in the Public Works MBR Capacity Increase up to 6 MGD (32MGD) Account No. 9912123-440301



11

[RiversideCA.gov](http://RiversideCA.gov)

11

## RECOMMENDATIONS

That the City Council:

1. Approve the Agreement to purchase and install an additional six MGD of LEAPmbr ZEEWEED 500D MBR's and associated equipment from ZENON, in accordance with Purchasing Resolution 702 (k); and
2. Authorize the City Manager, or his designee, to execute the agreement and all related documents.



12

[RiversideCA.gov](http://RiversideCA.gov)

12