



OPERATIONS COMMITTEE

Administration Building
10844 Ellis Avenue
Fountain Valley, CA 92708
(714) 593-7433

Agenda Report

File #: 2022-2469

Agenda Date: 9/7/2022

Agenda Item No: 7.

FROM: James D. Herberg, General Manager
Originator: Riaz Moinuddin, Director of Operations & Maintenance

SUBJECT:

PLANT NO. 1 ACTIVATED SLUDGE AERATION DIFFUSER MEMBRANE REPLACEMENT REPAIR

GENERAL MANAGER'S RECOMMENDATION

RECOMMENDATION:

- A. Approve a Purchase Order Contract to SS Mechanical Construction Corp. to provide Aeration Basin Disc Replacement, Specification No. S-2022-1334, for a total amount not to exceed \$171,930 for the period beginning October 1, 2022, through September 30, 2023, with four (4) one-year renewal options; and
- B. Approve an annual contingency of \$17,193 (10%).

BACKGROUND

The Activated Sludge Process uses fine bubble diffusion aeration systems to treat primary effluent by dissolving oxygen in the primary effluent to support highly concentrated bacteria which metabolizes organic matter in wastewater. There are 16 reactor basins with 8,500 individual rubber membranes located at the bottom of each reactor basin at Orange County Sanitation District (OC San) Plant No. 1. Compressed air is piped to the individual membranes and forced through tiny holes in the rubber membranes making fine bubbles.

The rubber membranes have an approximate life expectancy of 7 to 10 years. The discs must be replaced as the holes in the discs become stretched or clogged and the rubber becomes brittle. As a result, the efficiency of the whole system is diminished.

RELEVANT STANDARDS

- Meet volume and water quality needs for the GWRS
- Maintain a proactive asset management program
- Maintain a culture of improving efficiency to reduce the cost to provide the current service level or standard

PROBLEM

Some of the Plant No. 1 Activated Sludge diffuser membranes have been in operation for over 10 years and need replacement. As a result, the oxygen transfer efficiency has diminished which results in higher energy costs.

PROPOSED SOLUTION

Approve a low bid Purchase Order Contract with SS Mechanical Construction Corp. (Spec. No. S-2022-1334) to replace the aeration diffusers in three reactor basins per year at Plant No. 1 Activated Sludge facilities.

TIMING CONCERNS

The fine bubble air diffusers that cover the bottom of the aeration basins have become clogged or stretched over time resulting in much greater costs in air compressor energy usage for appropriate oxygen transfer to support the activated sludge treatment process.

RAMIFICATIONS OF NOT TAKING ACTION

Inefficient oxygen transfer results in higher energy costs. In addition, there are various known issues, such as leaks which are affecting the performance of Plant No. 1 Activated Sludge Plants Nos 1 & 2. If not corrected, the Plant performance will eventually drop to unacceptable levels, negatively affecting effluent water quality, Ground Water Replenishment System production, and OC San operations.

PRIOR COMMITTEE/BOARD ACTIONS

N/A

ADDITIONAL INFORMATION

OC San issued a Notice Inviting Bids in June of 2022. Eight (8) bids were received as follows:

Company Name	Bid	Determination
SS Mechanical Construction Corp.	\$171,930.00	Responsive
MPK Solutions General A Eng Contractor	\$196,980.39	Responsive
J.R. Filanc Construction Co. Inc.	\$197,100.00	Responsive
Vicon Enterprise Inc.	\$198,000.00	Responsive
Abhe & Svoboda Inc.	\$209,751.00	Responsive
Tharsos Inc.	\$237,666.00	Responsive
Downstream Services, Inc.	\$241,584.00	Responsive
Garney Pacific, Inc.	\$585,000.00	Responsive

SS Mechanical Construction Corp. was found to be the lowest responsive and responsible bidder. Therefore, staff recommends approving a Purchase Order Contract to SS Mechanical Construction Corp.

A contingency of 10% is recommended because of the potential for additional work which may be required once the aeration system is disassembled.

CEQA

N/A

FINANCIAL CONSIDERATIONS

This request complies with the authority levels of OC San's Purchasing Ordinance. This recommendation will be funded under the Repairs and Maintenance line item for the Plant No. 1 Maintenance Division (Adopted Budget Fiscal Year 2022-23 and 2023-24, Section 06, Page 92), and the available funding is sufficient for this action.

<u>Date of Approval</u>	<u>Contract Amount</u>	<u>Contingency</u>
09/07/2022	\$171,930	\$17,193 (10%)

ATTACHMENT

The following attachment(s) may be viewed on-line at the OC San website (www.ocsan.gov) with the complete agenda package:

N/A