



**DATE:** July 17, 2018

**TO:** Mayor and City Council

**FROM:** Director of Utilities & Environmental Services

**SUBJECT:** Recycled Water Treatment Facility Project – Phase I: Approval of Addendum Nos. 1 and 2 and Award of Procurement Contract for Membrane Treatment System Equipment

### **RECOMMENDATION**

That Council adopts the attached resolution approving Addendum Nos. 1 and 2, rejecting the lowest bid as non-responsive, and awarding a contract to the second lowest bidder, Harn R/O Systems, Inc., for procurement of membrane treatment system equipment for the Recycled Water Treatment Facility Project – Phase I, in an amount not to exceed \$966,770.

### **SUMMARY**

The City is implementing the Recycled Water Storage and Distribution System Project (Recycled Water Project), which would provide a locally sustainable and drought-proof supply of recycled water to customers for irrigation and industrial uses. In December 2017, Council authorized staff to proceed with design of a City-owned recycled water treatment facility to ensure sufficient recycled water supplies are available to meet the demand for the first phase of the City's Recycled Water Project. The proposed City-owned recycled water treatment facility would be a package membrane treatment system capable of producing up to 500,000 gallons per day of disinfected tertiary treated recycled water. On May 8, 2018, Council approved the plans and specifications for procurement of the membrane treatment system equipment and called for bids to be received on June 12, 2018. Four (4) bids were received. Staff is requesting Council approval of Addendum Nos. 1 and 2 and recommending Council reject the lowest bid as non-responsive and award the procurement contract to the second lowest bidder, Harn R/O Systems, Inc., at \$966,770.

### **BACKGROUND**

The City's Recycled Water Storage and Distribution System Project (Recycled Water Project) consists of constructing a storage tank and pump station at the City's Water Pollution Control Facility (WPCF) and installing distribution pipelines and customer connections to deliver recycled water to customers for irrigation and industrial uses. The initial phase of the project includes installation of approximately nine miles of distribution pipelines and is anticipated to

deliver an estimated 290 acre-feet per year, or about 260,000 gallons per day (gpd), of disinfected tertiary treated recycled water for parks, schools, businesses and industrial parks within a three-mile radius of the WPCF. Once the initial distribution pipelines and storage system is constructed, there may be opportunities to expand the system and include more customers in future phases.

Until recently, the provision for a recycled water treatment facility had not been included in the project planning as staff anticipated obtaining recycled water from the Russell City Energy Corporation, LLC's (RCEC) Recycled Water Facility, located adjacent to the WPCF. However, due to concerns that a supply agreement cannot be implemented with RCEC in a timely manner, on December 12, 2017, Council authorized staff to move forward, in parallel, with design of a City-owned, 500,000 gpd recycled water treatment facility to meet the demand of the first phase of the City's project. Funding for the installation of a City-owned recycled water treatment facility for Phase I of the Recycled Water Project is included as a separate project in the ten-year Capital Improvement Program. Additional background and discussion on the two recycled water supply options can be found in the December 12, 2017 staff report at the following link: <http://bit.ly/2HebfPK>.

#### Package Membrane Treatment System Equipment

The proposed Phase I City-owned recycled water treatment facility would be a package membrane treatment system, capable of producing up to 500,000 gpd of disinfected tertiary treated recycled water for the initial phase of the City's Recycled Water Project. The treatment facility would be sited at the WPCF, adjacent to the future recycled water storage tank and pump station, and consist of a feed pump station, a containerized membrane treatment system, and chlorine disinfection. The package membrane treatment system will be pre-assembled within a shipping container. All components of the membrane treatment system will be designed, coordinated, and supplied by a single membrane system manufacturer or supplier. The bid package also includes procurement of chemical storage tanks and feed pumps that will be located adjacent to the container and interconnecting piping and a pipe rack to be installed between the storage tanks and containerized membrane system.

#### Equipment Pre-selection and Procurement

A typical approach for designing package membrane treatment system equipment is to pre-select the membrane system supplier so final design documents can be prepared for installing the selected membrane treatment system equipment. This approach reduces time and the risk of change orders during construction. Staff worked with a consultant to prepare bid documents to procure the membrane treatment system equipment.

The procurement specifications require work to be completed in two stages. The first stage includes engineering services for the membrane system supplier to provide technical information and drawings needed for the City to complete final design of the recycled water treatment facility. The second stage would include fabrication and furnishing of the membrane treatment system equipment. The City's intent is to include the membrane treatment system equipment contract in the bid package being prepared for construction of

the recycled water treatment facility and require the construction General Contractor to purchase and install the membrane treatment system equipment as part of their contract.

Staff anticipates completing final design of the City-owned recycled water treatment facility in late 2018. At that time, staff will evaluate the progress of efforts to finalize an agreement with RCEC and determine whether to request Council authorization to proceed with construction of the City-owned recycled water treatment facility to supply the initial phase of the project. Notice to commence fabrication on the containerized membrane treatment system would be dependent on and not occur until after Council has considered approval of a contract to construct the City-owned recycled water treatment facility.

## **DISCUSSION**

On May 8, 2018, Council approved the plans and specifications (bid documents) for procurement of the membrane treatment system equipment and called for bids to be received on June 12, 2018. At the request of bidders, the bid date was postponed by a week to June 19, 2018. During the bidding phase, two addenda were issued to provide minor clarification to the bid documents. Four (4) bids as listed below were received from prospective equipment suppliers.

<b>Bidders</b>	<b>Bid Price</b>
H2O Innovation, Inc. (H2O Innovation)	\$894,884
Harn R/O Systems, Inc. (Harn)	\$895,157
Wigen Water Technologies, Inc. (Wigen)	\$905,843
Scinor Water America, LLC (Scinor)	\$948,010

The City publishes bid documents for competitive bids to set a standard by which to measure the bids. In accordance with the bid documents, the City has discretion to waive informalities so long as the informalities are immaterial. H2O Innovation submitted the low bid in the amount of \$894,994. However, H2O Innovation submitted a list of clarifications with their bid that materially deviated from the requirements of the bid documents, rendering their bid non-conforming. Staff has determined that waiving these irregularities would affect the bid price and provide an unfair advantage or a benefit not allowed to the other bidders. Therefore, staff recommends that Council reject H2O Innovation's bid as non-responsive.

Harn submitted the second lowest bid in the amount of \$895,157, which is approximately 33% below the Engineer's estimate of \$1,327,000. Harn's bid is responsive to the requirements of the bid documents. Therefore, staff recommends awarding the procurement contract to Harn as the lowest responsive bidder. The total contract amount requested is \$966,770, which includes an additional \$71,613 (or 8% of the bid amount) for administrative change orders in the event additional funds are needed for unforeseen conditions and changes during design.

## ECONOMIC IMPACT

The economic impact of the Recycled Water Project on customers will, to some extent, depend on the total costs to implement the City's Recycled Water Project, which includes the capital and operating costs for the storage and distribution system, and the cost to either obtain recycled water from RCEC or construct, operate, and maintain a City-owned recycled water treatment facility. Over a twenty-year period, the costs to obtain recycled water from RCEC and the City-owned recycled water treatment facility are estimated to be roughly the same. To the extent that the project is partially funded by grants, the overall cost impact to customers will be reduced. Once the costs are finalized and funding sources are in place, staff will recommend a rate structure that would provide a balance between recovering costs over the life of the project and offering an incentive to customers who are able to receive recycled water. The community as a whole will benefit from this project through greater diversity and reliability of water supplies, especially during periods of drought.

## FISCAL IMPACT

The total estimated costs for the Recycled Water Treatment Facility Project – Phase I are as follows:

Design and Engineering Services – Consultant		\$ 296,000
Membrane Treatment System Equipment Contract		
Stage I – Engineering Services	\$ 85,575	
Stage II – Fabrication	\$ 809,582	
Administrative Change Order	\$ 71,613	
	Subtotal	\$ 966,770
Construction Contract (estimate)		\$1,388,000
Construction Management and Inspection – City Staff (estimate)		<u>\$ 100,000</u>
		\$2,750,770

The procurement contract for membrane treatment system equipment will be \$966,770, which includes Harn's low bid of \$895,157 and administrative change order contingency budget of \$71,613.

The preliminary estimate to install the membrane treatment system equipment and complete construction of the City-owned recycled water treatment facility is \$1,388,000, which includes a 30 percent contingency to reflect the current bidding climate that has been affected by local and national disasters that have increased the demand for raw materials and labor. Expected accuracy for a preliminary design stage estimate typically ranges from 30 percent below or above the actual cost.

The adopted FY 2019 Capital Improvement Program includes \$2.3 million for the City to construct the City-owned recycled water treatment facility. The total project cost will be determined after construction bids are received for the project in early 2019. If additional monies are needed, staff will ask Council to consider the increased funding in the Water

Improvement and Sewer Improvement Funds. Implementation of the City-owned recycled water treatment facility option will not utilize any General Fund monies.

Total Phase I Recycled Water Project Cost

The total estimated capital cost to construct all facilities needed for Phase I of the Recycled Water Project, including the City-owned treatment facility, is shown in Table 1. The total cost for treatment, storage, and distribution facilities is currently estimated at \$30, 561,770.

**Table 1. Phase I Recycled Water Project Capital Cost Estimate  
(with City-owned Treatment option)**

FACILITY	ESTIMATED COST
Recycled Water Storage and Distribution System Project (Project No. 07507)	
Planning and Design	\$ 2,820,190
Construction	
Whitesell Pipeline ( <i>completed in 2015</i> )	\$ 513,648
Storage Tank and Pump Station ( <i>currently under construction</i> )	\$ 5,281,715
Distribution Pipelines System ( <i>currently under construction</i> )	\$ 17,170,399
Customer Retrofits ( <i>scheduled to be advertised in 2019</i> )	\$ <u>2,025,000</u>
Total (rounded to nearest thousand)	\$ 27,811,000
Recycled Water Treatment Facility Project – Phase I (Project No. 07710)	\$ 2,750,770
<b>TOTAL ESTIMATED PHASE I RECYCLED WATER PROJECT COST</b>	<b>\$ 30,561,770</b>

The Ten-Year Capital Improvement Program (CIP) includes \$27,811,000 for the Recycled Water Storage and Distribution System Project and \$2,300,000 for the Recycled Water Treatment Facility Project, for a total funding amount of \$30,111,000 million for Phase I of the Recycled Water Project. If additional monies are needed, staff will ask Council to consider the increased funding in the Water Improvement and Sewer Improvement Funds. The Recycled Water Project will not utilize any General Fund monies.

The City has also secured outside funding to help finance the Recycled Water Storage and Distribution System Project. In May 2017, the City executed a financing agreement with the State Water Resources Control Board for \$5.8 million in California Proposition 1 grant funding and \$13.5 million in the form of a low-interest Clean Water State Revolving Fund loan. Staff is currently working with the State to increase the amount of the low-interest loan from \$13.5 million to \$21.2 million.

## **STRATEGIC INITIATIVES**

Implementation of the Recycled Water Project supports the Tennyson Corridor Strategic Initiative. The purpose of this initiative is to develop an attractive, cohesive, thriving Tennyson Corridor through thoughtful engagement with residents, businesses and community partnerships. There are two sites located in the Tennyson Corridor that are proposed to be connected to the recycled water system, and would therefore support the following goal and objectives:

Goal 3: Improve Community Appearance.

Objective 1: Enhance landscaping.

Objective 3: Decrease blight.

The use of recycled water will help create attractive outdoor spaces in the Tennyson Corridor. Since recycled water is a sustainable and drought-proof source of supply, customers will be able to maintain their landscaping during water supply shortages when drinking water supplies are limited.

## **SUSTAINABILITY FEATURES**

The use of recycled water will reduce the demand for drinking water and improve the reliability and availability of drinking water, while providing a sustainable and drought-proof water supply for some irrigation uses. It will also reduce the volume of wastewater and associated residual pollutants discharged to San Francisco Bay, which is required to meet increasingly stringent discharge regulations.

## **PUBLIC CONTACT**

The City completed an environmental review of the Recycled Water Project in October 2014 and a draft Initial Study/Mitigated Negative Declaration (IS/MND) was circulated for a thirty-day public review from October 24, 2014 through November 24, 2014. The IS/MND included environmental review of both obtaining a recycled water supply from RCEC and construction of a City-owned recycled water treatment facility. The IS/MND was adopted on December 16, 2014, incorporating all the comments that were received.

The Council Sustainability Committee was updated on the status of the water supply agreement with RCEC and the City-owned treatment option on May 8, 2017 and November 13, 2017. At both meetings, the Committee expressed support for proceeding with the City-owned recycled water treatment facility option to ensure a supply for the initial phase of the City's Recycled Water Project.

## SCHEDULE/NEXT STEPS

Stage I development of technical information and drawings by the selected membrane system supplier is anticipated to take approximately two months after the Notice to Proceed is issued. The detailed piping layouts will be incorporated into the design drawings for the recycled water treatment facility and the bid package for construction of the recycled water treatment facility could be ready to be advertised by late 2018. Stage II fabrication of the membrane treatment system equipment is anticipated to take eight months. The current schedule shows that construction of the City-owned recycled water treatment facility could be completed and operational by the end of 2019. This schedule matches the schedule for construction of the recycled water storage and distribution system.

In summary, the following schedule has been developed for this project:

### **Membrane Treatment System Equipment Procurement**

Award of Procurement Contract	July 17, 2018
Issue Notice to Proceed for Stage I Engineering Services	July 31, 2018

### **Design and Construction**

Approval of Construction Plans and Drawings; Call for Bids	October 30, 2018
Issue Notice to Proceed for Construction/ Issue Stage II Notice to Commence Equipment Fabrication	January 31, 2019
Construction Completion	December 31, 2019

*Prepared by:* Feng Chang, Senior Utilities Engineer

*Recommended by:* Alex Ameri, Director of Utilities & Environmental Services

*Approved by:*



---

Kelly McAdoo, City Manager