



**DATE:** November 26, 2018

**TO:** Council Sustainability Committee

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

**SUBJECT:** Update on the Recycled Water Project

## **RECOMMENDATION**

That the Committee reviews and comments on this information report.

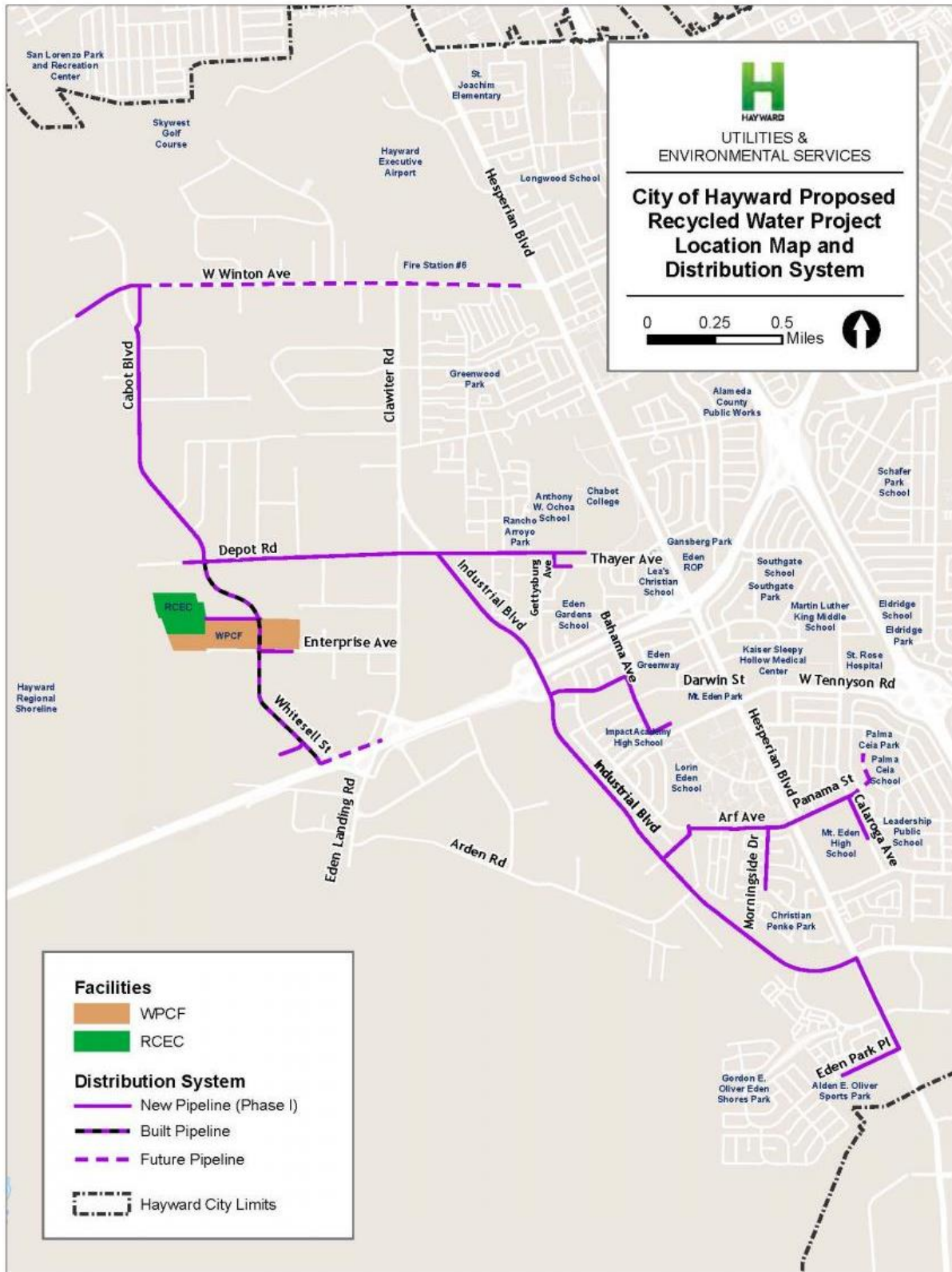
## **SUMMARY**

Construction of the City's Recycled Water Project, which will provide a locally sustainable and drought-resistant supply of recycled water to irrigation and industrial customers, is well underway. The first phase of the project includes construction of a treatment facility, storage tank, pump station, distribution system and customer connections, to deliver an estimated 290 acre-feet per year (260,000 gallons per day) of recycled water. Since staff last updated the Committee on the overall Recycled Water Project in May 2017, substantial progress has been made to implement the project. This report has been prepared to update the Committee on the status of the various project elements, including construction activities and final design of the recycled water treatment facility and customer site retrofits. The project is currently scheduled to be substantially complete by the end of 2019 with customer connections to the recycled water system and deliveries anticipated to begin in early 2020.

## **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 up to nine miles of distribution pipelines and customer connections to deliver an estimated 290 acre-feet per year, or about 260,000 gallons per day (gpd), of disinfected tertiary treated recycled water for the initial phase of the project. The use of recycled water will reduce the demand for potable water and improve the reliability and availability of potable water, while providing a sustainable and drought-resistant water supply for customers that connect to the recycled water system. Potential customers include 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. The project area and distribution system are shown on Figure 1.

Figure 1. Recycled Water Project Area and Distribution System



Until last year, provisions for a City-owned recycled water treatment facility were not included in the project, 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 lack of timely responses from RCEC and concerns that a supply agreement could not be implemented with RCEC in a timely manner, on May 8, 2017 the Committee directed staff to begin planning efforts for a City-owned recycled water treatment facility, while continuing efforts to reach agreement with RCEC, in order to avoid potential delays in implementing the project. On November 13, 2017, staff provided the Committee with an update on the status of both recycled water supply options. Due to the lack of progress being made with RCEC, the Committee agreed with staff's recommendation to proceed with final design of a City-owned and operated recycled water treatment facility.

On December 12, 2017, Council authorized staff to move forward with design of a 500,000 gpd recycled water treatment facility to meet the demand of the first phase of the City's project, in parallel with continuing efforts to reach agreement with RCEC. Both the RCEC and City-owned supply options were previously analyzed and considered in the environmental documentation prepared for the City's Recycled Water Project. Funding for the treatment facility 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.<sup>1</sup>

## **DISCUSSION**

Given the size and specialty nature of the various components of the project, the Recycled Water Project is being constructed under multiple contracts. The project is currently scheduled to be substantially complete by the end of 2019 with customer connections to the recycled water system and deliveries anticipated to begin in early 2020. This section provides an update on the current status of the major project elements that are needed to implement the project.

### Treatment Facility

On December 12, 2017, Council authorized staff to move forward with design of a 500,000 gpd City-owned recycled water treatment facility for the first phase of the City's project. The recycled water treatment facility would be a package membrane treatment system, capable of further treating the WPCF's secondary effluent to meet disinfected tertiary recycled water treatment standards set by the State for unrestricted irrigation uses. The treatment facility would be sited at the WPCF, adjacent to the future recycled water storage tank and pump station, currently under construction. The facility would consist of a feed pump station, a containerized membrane treatment system, and chlorine disinfection utilizing the recycled water storage tank to meet disinfection requirements.

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<sup>1</sup> <https://hayward.legistar.com/LegislationDetail.aspx?ID=3289806&GUID=7D97FB91-195D-4299-A7BA-EB28D4EEC8A9&Options=&Search=>

On July 17, 2018, Council awarded a contract for procurement of the membrane treatment system equipment so final design documents can be prepared for installing the pre-selected equipment. This approach reduces time and the risk of change orders during construction. Final design of the recycled water treatment facility is anticipated to be complete in December 2018.

Since there has been no progress with RCEC on a recycled water supply agreement, staff is recommending moving forward with the construction of the City-owned recycled water treatment facility and plans to ask Council to consider approval to advertise the recycled water treatment facility for construction in December 2018, with potential contract award in March 2019. Construction is anticipated to take nine months and be completed by November 2019.

Staff is currently working with the San Francisco Bay Regional Water Quality Control Board (RWQCB) to revise the City's permit to add production of recycled water from the proposed City-owned recycled water treatment facility. In November 2017, the City received approval from the RWQCB for distribution and use of recycled water under the State's General Order for recycled water. The original application did not include recycled water production since it was assumed that the supply of recycled water would be from RCEC. The revised application will be submitted by the end of 2018. Approval is not expected until fall 2019, since the RWQCB has indicated that they will require additional studies to be performed after the recycled water storage tank is constructed to demonstrate the effectiveness of the City's use of the storage tank to ensure disinfection requirements, before formally approving a revised permit for the City's Recycled Water Project.

#### Storage Tank and Pump Station

This contract includes construction of a one-million-gallon welded steel storage tank and a pump station at the WPCF. Notice to Proceed was issued to the contractor on May 18, 2018. Construction is anticipated to take one year and be completed in early May 2019. Construction of the storage tank and pump station is on schedule and no delays are currently anticipated.

#### Distribution System

This contract includes installation of approximately eight miles of pipelines and service laterals to deliver recycled water from the storage tank and pump station to customers.<sup>2</sup> Notice to Proceed was issued to the contractor on April 27, 2018. The original baseline schedule anticipated over eighteen months of construction, with an estimated completion date of January 2020. However, from the start, the pipeline contractor has been vigorously pursuing and expediting construction by pulling in multiple crews to increase productivity and progress is far ahead of schedule. All major construction activities, including pipeline installation, have been completed and project completion is estimated by the end of November 2018, over a year earlier than the baseline completion date.

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<sup>2</sup> As shown on Figure 1, the contract did not include the approximately one mile of pipeline in Whitesell Street that was installed in 2015, as part of the 880/92 Reliever Route Project that realigned Whitesell Street.

While the accelerated schedule has been a challenge for staff in terms of ensuring adequate construction management and inspection resources to keep up with the contractor's progress, the overall result is a benefit for both the City and the contractor. Early completion of the distribution system eliminates the impacts of construction work on City streets and traffic during the rainy season and the construction cost is anticipated to come in under budget.

### Customer Retrofits

Customer retrofits involve making modifications to each recycled water customer's on-site piping to connect the customer to the new distribution pipelines and maintain complete separation of the recycled water and drinking water systems at all times. Staff has identified approximately thirty customer sites that are feasible to connect to the recycled water system for the initial phase of the project. The retrofit designs for the thirty sites are nearly complete and staff is working with these customers to get them to sign retrofit agreements. The retrofit agreement provides the City or its contractor with access to the customer's site to perform the retrofit work at no cost to the customer. In return, the customer agrees to use recycled water in accordance with the City's Recycled Water Use Guidelines and to be solely responsible for maintenance of the on-site irrigation system, once the retrofit is complete. Council will be asked to approve the construction contract to retrofit all sites that have a signed retrofit agreement in July 2019.

To date, retrofit agreements have been signed or are close to being signed by approximately twenty-two sites. These sites include six schools, four parks, Life Chiropractic College, and eleven private businesses. Staff is continuing to work with the remaining customers to sign them up for the program. About half of the remaining customers are in discussions with staff and are likely to sign. Approximately 3-4 private customers have been non-responsive or have indicated that they do not want to participate in the City's recycled water program. Staff plans to discuss with the Committee options for signing up these remaining customers for recycled water service, which could include enforcing the City's Recycled Water Use Ordinance which requires mandatory use of recycled water for appropriate irrigation and industrial uses where such service is available. In the meantime, staff will continue efforts to contact the remaining customers and emphasize the benefits of switching to recycled water.

The schedule for completing the retrofit work and connecting customers to the recycled water system is dependent on when a supply of recycled water is available. Based on the schedule for the recycled water treatment facility, staff anticipates requesting Council approval of bid documents for customer retrofits in May 2019 with a potential contract award in July 2019. Prior to completion of the recycled water treatment facility, the contractor and City can perform limited site work, such as installing signs and training customers on the proper use of recycled water. After a recycled water supply is available, construction work is expected to take 3-4 months to connect all the City's customers for the initial phase. Recycled water deliveries are anticipated to begin in the Spring of 2020.

## 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 recycled water treatment facility. To the extent that the project is partially funded by grants, the overall cost impact to customers will be reduced. As part of the City's upcoming budget and rate setting process, 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 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 \$29,391,323.

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

<b>Facility</b>	<b>Estimated Cost</b>
Recycled Water Storage and Distribution System Project (Project No. 07507)	
Administration, 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 System ( <i>currently under construction</i> ) [ <i>estimated</i> ]	\$ 16,000,000
Customer Retrofits ( <i>scheduled to be advertised in 2019</i> )	\$ <u>2,025,000</u>
Total (rounded to nearest thousand)	\$ 26,640,553
Recycled Water Treatment Facility Project – Phase I (Project No. 07710)	\$ 2,750,770
<b>Total Estimated Phase I Recycled Water Project Cost</b>	<b>\$ 29,391,323</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 for Phase I of the Recycled Water Project. The CIP budget for the Recycled Water Storage and Distribution System Project is sufficient and, as described earlier, the cost to construct the distribution system is currently anticipated to come in under budget due to the substantial acceleration in completion date. (A lower, but still conservative figure is shown for the distribution system in

Table 1.) The current estimate for the Recycled Water Treatment Facility Project of \$2,750,770 exceeds the CIP budgeted amount of \$2,300,000. If additional monies are needed for the Recycled Water Treatment Facility Project, staff will ask Council to consider an increased appropriation from the Sewer Improvement Fund. However, with the lower anticipated cost of the distribution system, staff anticipates that the overall total amount budgeted in the CIP for Phase I of the Recycled Water Project is adequate to implement the project. The Recycled Water Project will not utilize any General Fund monies.

The City has also secured outside grant funding and low interest loans 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. The City and the State are in the process of executing an amendment to the financing agreement to increase the amount of the low-interest loan from \$13.5 million, which had been previously secured for the project, to \$21.2 million, for a total financial assistance package of \$27 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 nutrients and 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 was adopted on December 16, 2014, incorporating all the comments that were received. The Recycled Water Ordinance, which includes provisions for mandatory use of recycled water for appropriate irrigation and industrial uses, was introduced at a public hearing of the City Council on December 1, 2015 and adopted on December 15, 2015. Prior to the adoption of the Ordinance, a customer meeting was held on November 20, 2015 at City Hall to inform the customers about the City's proposed Recycled Water Project.

Throughout the construction of the distribution pipelines, notices were mailed to affected residents and property and business owners to inform them of the nature and purpose of the work, potential impacts, work schedule and City contact for additional information. Staff also provided project updates via the City's website and social media, and coordinated directly with any large employers, home owner associations, and schools to minimize construction impacts. For the night time work that occurred near Industrial Boulevard and Interstate 92, the City's inspectors hand delivered notices to affected residents describing measures being implemented to minimize noise impacts.

As described earlier, staff has been working closely with potential customers to design on-site piping modifications that would be required to connect a customer to the new recycled water distribution system. Staff will maintain regular communication with customers throughout project implementation so that questions and concerns are addressed in a timely way and site supervisors are properly trained on the use of recycled water. Informational materials on the Recycled Water Project can be viewed at the following website.<sup>3</sup>

## **NEXT STEPS**

Staff will continue work needed to implement the Recycled Water Project and update the Committee periodically.

*Prepared by:* Jan Lee, Water Resources Manager

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

*Approved by:*



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Kelly McAdoo, City Manager

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<sup>3</sup> <https://www.hayward-ca.gov/your-government/departments/utilities-environmental-services/recycled-water>