



**DATE:** December 12, 2017

**TO:** Mayor and City Council

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

## **SUBJECT**

Recycled Water Storage and Distribution System Project, Project No. 07507: Approval of Plans and Specifications and Call for Bids for the 1) Storage Tank and Pump Station and 2) Distribution Pipelines System

## **RECOMMENDATION**

That Council adopts the attached resolution approving the plans and specifications for the 1) Recycled Water Storage Tank and Pump Station and 2) Recycled Water Distribution Pipelines System, and calling for bids to be received on February 15, 2018.

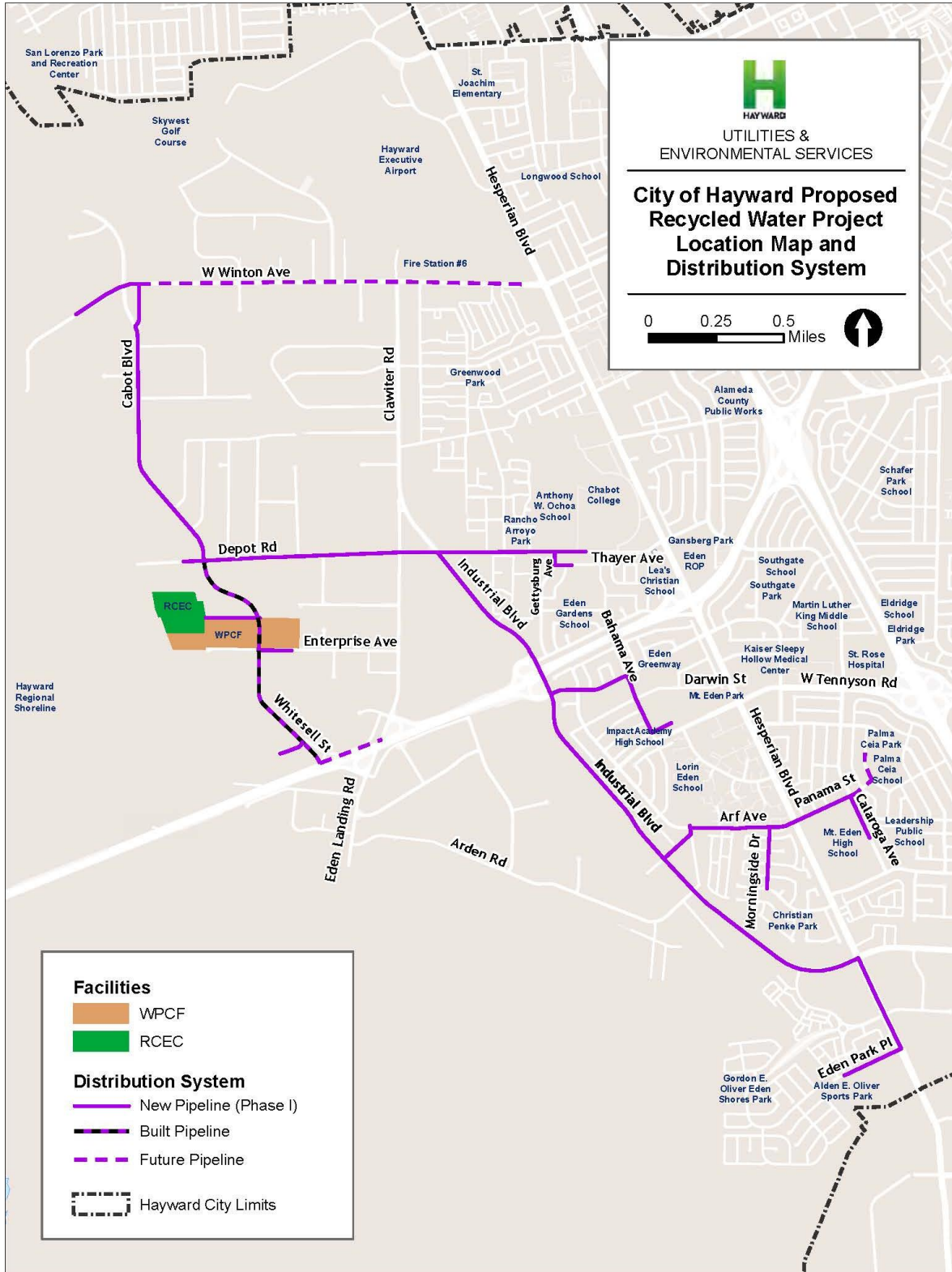
## **SUMMARY**

The City's Recycled Water Storage and Distribution System Project (Recycled Water Project) consists of constructing a one-million-gallon storage tank and pump station at the City's Water Pollution Control Facility (WPCF) and installing up to ten miles of distribution pipelines and customer connections to deliver recycled water to customers for irrigation and industrial uses. The project is being constructed under multiple contracts. Design has been completed and separate bid documents prepared for the storage tank and pump station and approximately eight miles of distribution pipelines. Staff is requesting Council's approval of plans and specifications and calling for bids to be received on February 15, 2018.

## **BACKGROUND**

The City's current Capital Improvement Program includes the Recycled Water Storage and Distribution System Project, which would provide a locally sustainable and drought-proof supply of recycled water to customers for irrigation and industrial uses. The project includes construction of a one-million-gallon storage tank and pump station at the City's WPCF and installing up to ten 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 irrigation and industrial uses in this phase. Customers would include parks, schools, businesses and industrial parks within a three-mile radius of the WPCF. Once the initial distribution pipelines and storage system are constructed, there may be opportunities to expand the system and include more customers in future phases. A map of the proposed distribution pipelines system is shown on Figure 1.

**Figure 1. Proposed Recycled Water Distribution Pipelines System**



On March 22, 2016, Council approved Resolution 16-041, authorizing the City to enter into a Professional Services Agreement with West Yost Associates, for design services and technical support for the storage tank, pump station, and distribution pipelines system.

The Recycled Water Storage and Distribution Project will be constructed under multiple contracts. As shown on Figure 1, approximately one mile of 8-inch diameter pipeline has already been installed in Whitesell Street, between Route 92 and Depot Road, as part of the 880/92 Route Reliver Route Project that realigned Whitesell Street. Separate construction contracts are also anticipated for the storage tank and pump station, the remainder of the Phase I distribution pipelines system, and the necessary customer retrofits. Customer retrofits involve making modifications to a customer's on-site piping to connect the customer to the new recycled water distribution pipelines system and maintain complete separation of the recycled water and drinking water systems at all times. Staff anticipates requesting Council approval of bid documents for customer retrofits in late 2018, after a substantial portion of the distribution pipelines system has been constructed.

The project does not currently include a recycled water treatment facility. Staff is pursuing two separate options to provide a supply of disinfected tertiary treated recycled water for the project: 1) obtain the supply from Russell City Energy Corporation, LLC's (RCEC) Recycled Water Facility, located adjacent to the WPCF or 2) construction of a new City-owned recycled water treatment facility. Staff is working with RCEC on the terms and conditions of a recycled water supply agreement for RCEC to provide the recycled water supply for the City's project. However, due to concerns that a supply agreement cannot be implemented with RCEC in a timely manner, staff will be requesting Council approval to proceed, in parallel, with design of a City-owned, 500,000 gpd (gallons per day) recycled water treatment facility to meet the demand of the first phase of the City's project. 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.

## **DISCUSSION**

The storage tank and pump station and distribution pipelines system will be bid as two separate construction contracts. They are each substantial enough to bid separately and the construction work requires different expertise. Staff believes that separating the work into two contracts will allow more contractors to bid on the contracts, which could result in more competitive bids for the project.

### **Storage Tank and Pump Station**

The bid documents include a one-million-gallon welded steel storage tank, and a pump station at the WPCF. The pump station includes two small pumps of 280 gallons per minute (gpm) capacity each, and two large pumps of 570 gpm capacity each, and has provisions for expansion as demand for recycled water increases in the future. In addition to the tank and pump station, a 3,100-gallon surge tank will be installed to help provide water during periods of low demand when the pumps are turned off.

## Distribution System

The bid documents include installation of 7.8 miles of polyvinyl chloride (PVC) pipelines, ranging in diameter from 6-inch to 12-inch, that will deliver recycled water from the storage tank and pump station to customers. Some of the major streets through which the pipelines will be constructed include: Whitesell Street; Cabot Boulevard; a small portion of West Winton Avenue; part of Depot Road; Industrial Boulevard; Arf Avenue; and a small portion of Hesperian Boulevard.

Special attention is being given to the design of the pipeline at crossings with Union Pacific Railroad (UPRR), Alameda County flood control channels, and PG&E gas lines. Staff is coordinating with these agencies and Caltrans to obtain encroachment permits. In addition, staff is also coordinating with the City's Engineering & Transportation Department to review locations of traffic sensing devices, work hour restrictions, and paving requirements.

The design specifications for the distribution pipelines system also include measures that are required in the Final Initial Study/Mitigated Negative Declaration (IS/MND) Mitigation, Monitoring, and Reporting Plan (MMRP) prepared for the project. These mitigation measures include continuous monitoring and specific field measures to avoid potential impacts to cultural resources in certain highly sensitive areas during construction. There will also be preconstruction surveys and continuous monitoring by a biologist to protect any nesting birds and endangered plants and species for parts of the pipeline installed closest to the Bay.

## Schedule

The current project schedule allows for contractors to make use of the winter months to prepare and submit bids when they are not otherwise busy with construction work. This may result in more competitive bids. As a condition of the City's agreement with the State for grant and loan funding for this project, Prime Contractors are required to advertise the project to subcontractors for 30 calendar days and make other good faith efforts to ensure that Disadvantaged Business Enterprises (DBEs) are made aware of subcontracting opportunities. Accordingly, the bid date provides for more time than typically provided to prepare bids, in order to account for the DBE requirement and holidays that fall between the advertisement date and the bid date.

Construction is anticipated to begin in spring 2018 and take approximately 18 months. Staff is targeting the end of calendar year 2019 to begin recycled water deliveries to customers.

## **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 pipelines system, and the cost to either obtain recycled water from RCEC, or construct, operate, and maintain a City-owned recycled water treatment facility. 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 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 Storage and Distribution System Project are shown in the table below:

Task	Estimated Cost
Administrative (City staff)	\$ 500,000
Planning and Design (Consultant)	\$ 2,222,000
Construction	
Whitesell Pipeline (construction completed in 2015)	\$ 514,000
<b>Storage Tank and Pump Station Construction Contract (Engineers Estimate)</b>	<b>\$ 4,358,000</b>
<b>Distribution System Construction Contract (Engineers Estimate)</b>	<b>\$ 13,240,000</b>
Traffic Control Plans and Traffic Loop Repairs	\$ 150,000
Customer Retrofit Construction Contract	\$ 1,000,000
Construction Management, Inspection, and Engineering Services During Construction (City and Consultant Staff)	\$ 1,708,000
Administrative Change Orders	\$ 1,542,000
RCEC Connection Infrastructure (allowance)	\$ 250,000
Subtotal Construction	\$ 22,762,000
<b>Total Estimated Capital Project Cost</b>	<b>\$ 25,484,000</b>

The current Ten-Year Capital Improvement Program (CIP) includes a budget of \$19,365,000 for the Recycled Water Storage and Distribution System Project. The CIP budget was based on a preliminary design estimate prepared for the City’s application for State funding, which did not include prior costs that are ineligible for grant funding, such as the installed pipeline in Whitesell Street. As shown above, the current total estimated capital cost for planning, design, and construction of the project exceeds the preliminary design estimate. Expected accuracy for a preliminary design stage estimate typically ranges from 30% below or above the actual cost. The current estimate in this case is approximately 32% higher than the amount budgeted in the CIP.

The current updated project cost estimate includes the following added costs that were not previously included or adequately defined in the preliminary design estimate:

- Construction costs to install nearly one-mile of pipeline in Whitesell Street completed as part of the 880/92 Route Reliver Route Project.
- Additional costs to fully restrain pipeline joints to address potential seismic concerns close to the Bay.

- Traffic related costs that take into consideration staff time to review traffic control plans, reprogram the signals, and repair the traffic loops.
- Additional cost to install a larger pipeline in Cabot Boulevard to serve future recycled water demands in the area, such as Skywest Golf Course.
- Cost for twelve bore and jacks (trenchless pipeline installation), which is much more expensive than open trench, to avoid conflicts with existing utilities.
- Costs to implement requirements in the MMRP, including costs to conduct biological surveys and continuous cultural resources monitoring in certain areas.
- Added contingency for the storage tank and pump station and distribution pipelines system contracts 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.
- Additional refinement of costs to modify customer on-site piping to connect to the future recycled water system.

The City has secured \$5,831,350 in grant funding under California Proposition 1 and \$13,533,650 in a low interest Clean Water State Revolving Fund loan to help finance the project. The City is also pursuing federal grant funding through the Bureau of Reclamation's Title XVI Water Recycling and Reuse Program. In August 2017, staff submitted a grant application to Reclamation for \$3,263,000 for funding under Title XVI and was recently notified that the City's application was unsuccessful. The Title XVI Program has limited funds and is highly competitive. Staff plans to request a debriefing from Reclamation to discuss ways to improve the City's application, and will continue to apply for Title XVI funding as additional opportunities are announced.

The extent of the funding shortfall will be determined after construction bids are received for the storage tank and pump station and distribution pipelines system. If additional monies are needed, staff will ask Council to consider the increased funding in the Water Improvement and Sewer Improvement Funds when the FY 2019 CIP is adopted. Implementation of the Recycled Water Storage and Distribution System Project will not utilize any General Fund monies.

## **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 IS/MND was circulated for a thirty-day public review from October 24, 2014 through November 24, 2014. The final IS/MND was adopted on December 16, 2014, incorporating all the comments that were received. The Recycled Water Ordinance, that includes mandatory provisions for 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 Recycled Water Ordinance, a customer meeting was held on November 20, 2015 at the City Hall to inform the customers about the project.

Prior to and during construction, notices will be provided to affected residents, 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. In addition, staff will separately contact any large employers and schools that may be affected by the project and coordinate work to minimize impact.

Staff is also working with potential customers to perform site surveys and design on-site piping modifications that would be required to connect a customer to the new recycled water distribution pipelines system. Staff will continue to work closely with all customers, including the Hayward Unified School District and the Hayward Area Parks and Recreation District to educate their staff, governing boards, and constituents about the use of recycled water for irrigation.

## **NEXT STEPS**

If Council approves the plans and specifications, staff will advertise the storage tank and pump station and distribution pipelines system for public bidding. Staff will return to the City

Council for award of the construction contracts after bids have been received and reviewed.  
The following schedule has been developed for this project:

Receive Bids	February 15, 2018
Award Construction Contracts	March 20, 2018
Construction Completion	September 2019

*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